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*With the Compliments
of the
Deputy Commonwealth Statistician
and
Government Statistician*

*13 St George's Terrace,
Perth,
Western Australia*



ANIMAL EMBLEM OF THE STATE OF WESTERN AUSTRALIA

NUMBAT OR BANDED ANTEATER
(*Myrmecobius fasciatus*)

The Numbat is one of Western Australia's most attractive marsupials and, although its range once extended into northern South Australia, the population today is confined mainly to the south-west of the State. Preferred habitat is Wandoo forest where the ground is littered with fallen branches and hollow logs. Here the Numbat finds both shelter and food and can be observed during daylight hours searching for termites in the logs and sub-surface soil. Termites are the main food of the Numbat and are exposed by the animal's sharp claws and then licked up by its exceptionally long tongue.

The Numbat is very easy to recognise; its general colour is reddish brown with a generous sprinkling of white hairs, and across the rump are several prominent white bars between which the hair is dark, sometimes almost black. Through the eye there is a prominent dark stripe which is framed above and below by long white streaks. The tail is often carried erect with the hair fluffed out like a bottle brush.

An adult Numbat is generally about sixteen inches long, of which slightly less than half is tail length. Usually a litter comprises four young which are born between January and April; these are carried or nursed by the mother through winter.



BIRD EMBLEM OF THE STATE OF WESTERN AUSTRALIA

BLACK SWAN
(*Cygnus atratus*)

The Black Swan was first recorded by the Dutch navigator Vlaming in January 1697 in the Swan Estuary. Although it is to be found throughout Australia, this graceful bird has been regarded with special affection by many generations of Western Australians and has long been used to identify things Western Australian.

The plumage is black, often with a brownish tinge, but the flight quills are pure white and very prominent when the bird is seen in flight. The beak is red with a white band near the tip and the legs and feet are dark grey.

Males and females are similar in size and appearance but males can be identified in flight by their larger neck and, when swimming, hold their neck more erect. The bird's voice can often be heard at night and is a musical honk or bugling sound. Nests are a bulky collection of sticks and rushes found in fresh or brackish swamps and lakes. Between four to eight eggs are laid and these are pale green, becoming paler as incubation proceeds. Incubation takes thirty-five days.

Aboriginal lore tells how the family ancestors of a section of the Bibbulman tribe of Western Australia were black swans who had been changed into men.

STATE EMBLEMS

By proclamation in *Government Gazette of Western Australia* Nos. 76 and 77 dated 2 October 1973, the Numbat and the Black Swan were declared to be, respectively, the animal emblem and the bird emblem of the State of Western Australia. The descriptive text overleaf is reprinted from the relevant Gazettes by courtesy of the Premier's Department.

*Registered at the General Post Office, Perth
for transmission through the post
as a book*

PREFACE

This is the thirteenth issue of the new series of the *Western Australian Year Book*. The old series, originally published for the year 1886 and discontinued in 1905, developed from the Blue Books of the Colonial Office, London, which contained the earlier statistical records of Western Australia.

The Year Book provides a general description of Western Australia and includes authoritative information on almost every aspect of life in the State. Together with chapters on social and economic progress, the Year Book includes information on government, geography and climate, vegetation and fauna. Considerable use is made of statistical tables to supplement the descriptive text and where appropriate, diagrams and graphs are also included for illustrative purposes. Each chapter contains the latest information available at the time of manuscript preparation. More recent information is given, in some cases, in the *Appendix*.

Because of the time required for editing and printing the Year Book, later data on a particular topic will often be available in mimeographed publications or on request to the appropriate section of this Office. More detailed statistics on matters treated generally in the Year Book are available in the several publications comprising *Statistics of Western Australia*. The reader is referred to the complete list of publications of the Western Australian Office which is provided at the back of this Book.

The reader's attention is drawn to the information service and library facilities provided by this Office, where all the publications of the Australian Bureau of Statistics are available for reference. Businessmen, manufacturers, primary producers, government authorities, students and the public generally are invited to make full use of these services.

I express my appreciation to the many government officials and others for their part in the preparation of material for this Year Book and to those organisations which made available blocks or photographs used in the illustrations. Special thanks are due to the Editor of Publications (Mr J. E. Gowdy B.Ec. (Hons.)), other officers of the Bureau and the Government Printer and his staff for their contribution to the Year Book project.

W. M. BARTLETT
Deputy Commonwealth Statistician
and
Government Statistician

30 August 1974

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GENERAL MAP OF WESTERN AUSTRALIA (inside back cover)

CONVERSION TO METRIC UNITS OF MEASUREMENT

The object of the *Metric Conversion Act* 1970, as stated in section 5, is 'to bring about progressively the use of the metric system of measurement in Australia as the sole system of measurement of physical quantities'. Accordingly, quantity data originally expressed in imperial units in this publication are now (as far as possible) expressed in metric units of measurement. The factors which have been used in converting figures from imperial units to metric units (and the abbreviations used for the metric units) are shown below. In each case, the imperial unit is multiplied by the factor given.

<i>Imperial unit</i>	<i>Conversion factor</i>	<i>Metric unit</i>	
acre	0·404686	hectare	(ha)
cubic yard	0·764555	cubic metre	(cu m)
gallon	4·54609	litre	(l)
gallon	0·00454609	cubic metre	(cu m)
hundredweight	50·802345	kilogram	(kg)
inch	25·4	millimetre	(mm)
lb	0·45359237	kilogram	(kg)
mile	1·609344	kilometre	(km)
miles per hour	1·609344	kilometres per hour	(km/h)
ounce	28·349523	gram	(g)
square mile	2·58999	square kilometre	(sq km)
super. foot	0·00235974	cubic metre	(cu m)
therm	105·506	megajoule	(MJ)
ton	1·016047	tonne	(t)

ROUNDING OF FIGURES

Many of the figures appearing in the tables have been rounded (to thousands or, in some cases, millions), without making those adjustments which would be needed to make the rounded figures add to the rounded total. It is for this reason that figures do not always add to the totals shown in the tables.

Percentages appearing in the tables have been corrected to the first (or second) place of decimals without making those adjustments which would be necessary to make the percentages so expressed add to precisely 100.

CHAPTER I—DISCOVERY OF WESTERN AUSTRALIA⁽¹⁾

Terra Australis Incognita, or *Magellanica*, the unknown Southern Continent, or Great Southern Land of ancient geographers and explorers, is said to have been first discovered by the Portuguese between the years 1511 and 1529, when some vessels belonging to that nation, engaged in the exploration of the Indian Seas, driven out of their course by currents or stress of weather, accidentally drifted on to the Australian coast. The authenticity of this account is, however, doubted.

In 1567 Alvaro de Mendana sailed from Callao, in Peru, in search of the Continent believed to exist in the Southern Seas, but the only result of the expedition was the discovery of the Solomon Islands.

In 1595 Mendana again left Peru in charge of an expedition equipped for the purpose of colonising the Solomon Islands, previously discovered, and chanced on the Marquesas and Santa Cruz Islands. He died on one of the latter, the expedition returning to Peru.

The spirit of enterprise displayed by the Portuguese served, however, to encourage the Dutch East India Company, with their already established factories in Java and other parts of the Indian Archipelago, to researches in the direction of Australia. Their first object was New Guinea, where it was rumoured that gold was found. Frederick de Houtman, Governor of Amboyna (in the Moluccas), organised an expedition in 1605. Under his instructions the Dutch yacht 'Duyfken' (*Little Dove*), Commander Willem Jansz, supercargo Jan Lodewijkszoon Rosingeyn, sailed from Bantam on 18 November of that year, whence, after receiving further instructions from Jan Willemsz Verschoor, the company's President, she sailed to explore the island of New Guinea. During March in the following year she coasted along that portion of *Terra Australis* lying in the Gulf of Carpentaria to the south-west of Cape York, as far as Cape 'Keer Weer', or 'Turn Back', her commander mistaking it for the west side of New Guinea, and thus, unconsciously, making the first authenticated discovery of the long sought-for Southern Continent. These seem to be all the particulars available as to the results of this expedition, and even they are doubtful, as the journal of Captain Jansz unfortunately appears to have been lost.⁽²⁾

On 21 December 1605, Pedro Fernandez de Quiros, who had been pilot under Mendana and Luiz Vaz de Torres, left Callao with three Spanish vessels in search of the supposed *Tierra Austral*, and amongst others discovered one of the islands now called the New Hebrides, to which, supposing it to be the object of their search, they gave the name of *Austrialia del Espiritu Santo*. Torres, in the 'Almirante', on 11 June 1606, found himself separated from de Quiros and, ascertaining that the newly discovered land was only an island, continued his search westward, passing, also unconsciously, in sight of the sought-for continent, through the Straits that now bear his name.

In 1611 certain ships going from the Netherlands to India, after doubling the Cape, followed another route than that usually adopted: they ran on an eastern course, in about 36° southern latitude, for a considerable time, and then tried to navigate to Java on a northerly course. The commander, the subsequent Governor General Hendrik Brouwer, wrote to the Directors of the East India Company concerning 'this fairway' in highly laudatory terms, as preferable to the usual course by Madagascar, which offered many dangers and objections. The new route was thenceforth prescribed to the Company's

⁽¹⁾ Reprinted, with minor editing, from the *Western Australian Official Year Book*, 1905 (Old Series).

⁽²⁾ Dr W. G. C. Byvanck, the Chief Librarian of the Royal Library at The Hague, who kindly furnished authentic information with regard to the early Dutch voyages to Western Australia, quotes De Jonge, 'Rise of the Dutch Dominion in East India', iii., 42-4, and Lants, also P. A. Leupe, 'Voyages of the Dutch to New Holland' (in his 'Treatise on the Naval Exploits of the Dutch'). Professor Dr J. E. Heeres, of Leiden, in an abstract of valuable notes kindly made available for publication in the Year Book, gives a similar account.

ships. As early as 1618 and 1620 the Company urged upon the Governor General of India the importance of following up the discoveries in the region of 'The Southland'. Jan Pieterszoon Coen, who was then directing the affairs of the Company in India, gave instructions, on 29 September 1622, for the ships 'Haring' (*Herring*) and 'Hazewind' (*Greyhound*) to sail, 'destined for the further discovery of the Southland'. The commanders were 'specially to inquire what minerals, such as gold, silver, tin, iron, lead, and copper, what precious stones, pearls, vegetables, animals, and fruit these lands' produced; and the countries discovered were 'to be taken possession of'. Jan Carstensz was to be in command. The ships, however, for some reason did not sail on their ordained expedition. The enterprise of the Company probably found its boldest expression in that eminent navigator, Van Diemen; but in his time the Directors of the Company began to slacken in their zeal for exploration, finding the expenses too great; and gradually the idea of further colonial expansion was abandoned, thus leaving Australia to be colonised by others. At the close of the 17th century Nicolaas Corneliszoon Witsen, Burgomaster of Amsterdam and General Director of the East India Company, with a special view to the enlargement of geographical knowledge, took a diligent part in the preparations for the voyage of skipper de Vlaming. A few years later he bitterly complained of the indifference of many of his countrymen in those days, who did not 'care about curious learning from India', but 'money only'. As Professor Heeres says: 'The times of Van Diemen had failed to return; the spirit by which he was imbued no longer presided over the debates on colonial matters.'⁽³⁾

In 1616 Dirk Hartogs (Hartochsz), in command of the Dutch vessel 'Eendragt', or 'Eendracht' (*Concord*), supercargo Cornelis Buysero, outward bound from Holland to the Indies, entered Shark Bay, and gave his name to the island upon the western side of the Bay. The name 'Dor Eylandt', or 'Dorre Eylandt' (*Barren Island*) was then, or subsequently, given to the largest island at the entrance of the Bay. A tin plate nailed to a post erected at the north end of Dirk Hartogs Island remained for many years a memento of his visit. His countryman, Willem de Vlaming, who visited the island in 1697, relates that he found the plate on 4 February of that year and, taking it away with him, entrusted it to the Governor General at Batavia, who forwarded it to the Board of Seventeen Directors of the Dutch East India Company in Holland, the President of which was, at that time, Burgomaster Nicolaas Witsen. Vlaming gave a rendering of the inscription, which, translated from the Dutch, runs as follows:

'ANNO 1616, the 25th of October.—Arrived here the ship "Eendracht", of Amsterdam; the first merchant Gillis Miebaais of Liege. Dirck Hartogs, of Amsterdam, Captain. 27th Do.—Sailed for Bantam.'

On the lower part, cut with a knife, were to be read in Dutch the words:

'The Under Merchant Jan Steyn, Upper Steersman, Pieter Ledoecker of Bil. A° 1616.'⁽⁴⁾

Such, at least, was the wording of the duplicate plate which he caused to be substituted for the one removed.⁽⁵⁾ The original plate of Dirk Hartogs was discovered in 1902 by Mr J. F. L. De Balbian Verster, in the 'Rijks-Museum' (State Museum) at Amsterdam, and it was then seen that the latter part of the inscription thereon reads as follows:

'The Under Merchant Jan Stins, Upper Steersman, Pieter Dockes of Bil. A° 1616.'

Vlaming's inscription was seen by Captain Hamelin, of the French exploring vessel 'Naturaliste', in 1801; but the plate had disappeared in January 1822, when King caused a careful search to be made for it. This disappearance can be accounted for by a statement made by de Freycinet to the effect that he had removed it and deposited it for safe keeping in the Museum of the French Institute, which fact is referred to in the minutes of the Society, dated 23 March 1821. In spite, however, of this statement, a careful search subsequently at the turn of the century made by the Secretary⁽⁶⁾ of the Institute failed to discover its

⁽³⁾ 'The Part borne by the Dutch in the Discovery of Australia, 1606-1765', by Professor J. E. Heeres, LL.D.

⁽⁴⁾ The lithograph representing Vlaming's plate, is a reproduction from the drawing in Freycinet's 'Voyage autour du Monde', and differs from the above in the spelling of the names. ⁽⁵⁾ Dr Byvanck refers to Major's 'Introduction' to 'Early Voyages to Terra Australis', p. 32. ⁽⁶⁾ Dr Alfred Grandidier, who has kindly revised the portions of this historical abstract, referring to the French voyages.

whereabouts. [The plate was located by chance in 1940 and is now held by the Fremantle Branch of The Western Australian Museum—Ed.]

Dirk Hartogs examined the coastline between south latitude 26°30' and 23°, and called the intervening country 'Eendracht's Land'.

On 11 May 1618, the ship 'Zeewolf' (*Seawolf*), from the Netherlands to India, supercargo Pieter Dirkszoon, skipper Haevik Claeszoon Van Hillegom, sighted land in southern latitude 21°20', about 'a thousand miles' (German sea miles) east of Africa.

In July of the same year a Dutch vessel called 'Mauritius', supercargo Willem Jansz, skipper Lenaert Jacobsz, touched near North West Cape, and discovered the 'Willems-rivier' (probably the Ashburton), in lat. 21°45' south.

In 1619 a fleet of eleven vessels, under the command of Frederik de Houtman, in the ship 'Dordrecht', discovered, on 29 July of that year, a reef lying off this coast, to which the name of 'Frederik Houtman's Abrolhos' was given.⁽⁷⁾ It consists of a cluster of rocky islets and outlying reefs about forty-five miles to the west and north-west of Champion Bay. The term Abrolhos is a contraction of the Portuguese words 'abri vossos olhos', meaning in English 'Open your eyes', and was applied by the Portuguese to outlying coastal dangers. On board one of the ships of Houtman's fleet, the 'Amsterdam', was Jacob D'edel, the first merchant (supercargo), and it was after him that the district between Shark Bay and Champion Bay was named 'Edel's Land'.

In 1622 the Dutch vessel 'Leeuwin' (*Lioness*) rounded the Cape at the south-west corner of the continent which now bears her name, and examined the shore as far as what subsequently became known as King George III Sound; this portion of the continent being subsequently known as Leeuwin's or Lyon's Land.

On 5 July 1622, a boat arrived at Batavia with ten men, forming part of the crew of an English ship named the 'Trial', and on 8 July her pinnace arrived with thirty-six men. They stated that they had lost and abandoned their ship with ninety-seven men and the cargo on certain rocks situated in latitude 20°10' south, in the longitude of the western extremity of Java. These rocks were near a number of broken islands lying very far apart. They said that they had met with this accident through following the course of the Dutch ships. The yacht 'Hazewind' was selected to discover those lands, but never started. It is probable that the shipwrecked English sailors were considerably out in their statement as to the longitude of the 'Trial' or 'Tryal' rocks, which have since been located on the south-western part of the Monte Bello Reef, extending three or four miles north and south, the central and largest rock lying north, distant 5¼ miles, from the north extreme of Barrow Island.

On 22 July 1622, the Dutch ship 'tWapen van Hoorn' (*The Arms of Hoorn*), having sailed from the Texel on 22 December 1621, arrived at Batavia, and reported that she had been in extreme peril near Eendrachtsland.

On 21 July 1623, the Dutch ship 'Leyden', skipper Klaas Hermansz, sighted Eendrachtsland. This same ship, under the command of Daniel Janssen Cock, sighted 'The Southland', on 28 April 1626.

On 16 November 1623, the yacht 'Tortelduyff' (*Turtledove*) sailed from the Texel and, during her voyage to Batavia, where she arrived on 21 June 1624, probably discovered and named the Turtledove Shoal.

In January of the same year, 1623, an expedition under Jan Carstensz, from Amboyna, in the vessels 'Pera' and 'Arnhem', discovered Arnhem Land (Aarnems land). The skipper of the 'Arnhem', Dirck Melisz, having been killed in an attack by natives, the second mate of the 'Pera', Willem Joosten Van Coolsteerdt, was appointed as his successor. 'In this discovery were found everywhere shallow water and barren coasts; islands altogether thinly populated by divers cruel, poor, and brutal natives, and of very little use to the company.' This exploration was, in April 1636, continued by Gerrit Thomaszoon Pool, who was also murdered by natives at the same spot, and Pieter Pieterszoon, in the yachts 'Klyn Amsterdam' and 'Wezel'.

(7) Dr Byvanck refers to Major's 'Introduction', p. 86, and the strictures on the passage given by P. A. Leupe, 'Treatise on the Naval Exploits of the Dutch', vol. xxvii. 1, sec. 2, p. 32.

On 16 January 1627, according to De Hondt, or 26 January to Thevenot's chart, the 'Gulde Zeepaerd' (*Golden Sea Horse*), skipper Francois Thyssen, having on board Pieter Nuyts, afterwards Ambassador to the Court of Japan, and subsequently Governor of Formosa, sighted the south coast of 'The Great South Land' near the present Cape Leeuwin, and made a close examination of the southern coastline for 1,000 miles, to Nuyts' Reef. Nuyts gave the name of Nuyts Land to the country lying round what is now known as the Great Australian Bight. It was on this voyage also that the islands St Francois and St Peter in Nuyts Archipelago, off the coast of South Australia, were named.

On 22 July 1627, the Governor General of Dutch India, Jan Pieterszoon Coen, sailed from Table Bay with the ships 'Galias', 'Utrecht' and 'Texel'. The 'Galias', having broken her rudder in a gale on the night of 10 August, parted company from the other ships, and on 5 September was nearly wrecked on the coast of Eendrachtstland.

On 17 September of the same year the ship 'tWapen Van Hoorn', supercargo J. Van Roosenbergh, sighted Eendrachtstland, near Dirk Hartogs Roadstead. Fresh observations were made during each of these voyages, and the coast consequently became more accurately defined on the map.

In 1628 an expedition was equipped in Holland, bound for the East Indies. It had originally been intended that the fleet should consist of eleven vessels, but three of them, being ready to sail before the others, left Texel on 28 October, under the command of Commodore Francis Pelsart. The 'Batavia', Pelsart's ship, driven out of her course during a severe storm, was separated from the other two and having lost her reckoning, struck, on the night of 4 June 1629, on one of the islands of Houtman's Abrolhos, becoming a total wreck. The greater part of the crew and passengers, however, safely reached the shore. After vainly searching for water on the adjacent islands and the mainland opposite, Pelsart, with eight men, eventually made his way in one of the vessel's boats to Batavia, where he arrived on 5 July; here he obtained the use of a frigate called the 'Sardam', in which he returned to rescue the remainder of the castaways. On his arrival he found that during his absence a portion of the crew, under the supercargo, Jerome Cornelis, had mutinied and massacred the greater number of the passengers, intending to seize any vessel that might chance to come near the islands, and then turn pirates. Pelsart, being forewarned of this intention by some of those who had escaped from the mutineers to another island, easily captured the ringleaders, who were promptly tried and as quickly executed, two of their number being marooned on the mainland near Champion Bay. On 28 October 1629, the chief part of the silver treasure having been recovered from the wrecked vessel, the 'Sardam', with the survivors on board, sailed for Batavia. Pelsart's Journal mentions the so-called 'Jacob Remessens', 'Remens', or 'Rommer' River, in latitude 22°17'. As the modern maps show no river of any size at that point, it may perhaps be surmised that Exmouth Gulf was mistaken for the mouth of a river. It is evident that the name 'Jacob Remessens Rivier' had been given in or before 1628.

In the same year, 1628, Captain Gerrit Fredericksz de Wit, of the homeward bound 'Vianen', ran aground off the land which is now comprised in the North-West and Kimberley Districts, and sailing along the coast for about fifty miles, gave his name to that part of Australia.

In 1629 the west coast of Australia was touched at by Dutch vessels in the neighbourhood of Dirk Hartogs Roadstead.

In 1632 the Trials were passed by Dutch ships on the outward voyage, but no fresh information of importance was gained.

In 1635, on 25 May, the ship 'Amsterdam', under Commander Wollebrand Geleynszoon de Jongh, and skipper Pieter Dirksz, sighted the 'Southland' in the neighbourhood of Shark Bay.

In 1644 Abel Janszoon Tasman, the celebrated Dutch explorer, and Franz Jacobszoon Visscher, with the yachts 'Limmen', 'Zeemeeuw' (*Sea-mew*) and 'De Brak' (*The Hound*) during a second expedition in these seas, examined the country which was afterwards called Tasman Land, to that bordering on the extreme north-western coast line of the continent, from Arnhem Land, or what is now the Northern Territory, to Exmouth Gulf,

in latitude 22°S. in this State. This comprised the country previously discovered, and named by de Wit, as well as part of Eendracht's Land—namely, the present districts of Kimberley and the North-West. Tasman appears to have landed in Carnot Bay and also in what was subsequently called Roebuck Bay, and on some of the islands in Dampier's Archipelago. He gave the name of *Nova Hollandia* or *New Holland* to the Western half of the continent of Australia. The name New Holland was applied by the Dutch only to the parts of the continent lying westward of a meridian line, passing through Arnhem Land on the north and near the isles of St Francis and St Peter to the south. All that to the eastward, including the shores of the Gulf of Carpentaria, still remained as *Terra Australis*. This appears from a chart published by Thevenot in 1663; which, he says, 'was originally taken from that done in inlaid work upon the pavement of the new Stadt-House at Amsterdam'.

In the present State of Western Australia are included all the lands on the south, west, and north-west coasts then known to the Dutch as 'The Great Known South Land', as distinguished from 'The Unknown Land', which comprised the remainder of the continent.

An exploratory voyage to the west coast of New Holland was made in 1648 by the ship 'Leeuwerik' (*Lark*), commanded by Jan Janszoon Zeeuw.

In 1656, on 28 April, the 'De Vergulde Draeck' (*The Gilt Dragon*), commanded by Pieter Albertsz, which had left Texel on 4 October 1655, was wrecked at night on a reef on the west coast in latitude 30°40', and 118 lives were lost. Leaving sixty-eight of the survivors of the wreck behind on the mainland to protect, if possible, the treasure (78,600 guilders) and merchandise, which comprised the cargo of the vessel, one of the ship's boats made for Batavia, which it duly reached; and the vessels 'Witte Valck' (*White Falcon*) and 'Goede Hoop' (*Good Hope*) were at once despatched to the rescue of the castaways and the property, unfortunately, however, without success.

In 1657 a further search made by the 'Vinck' (*Finch*), while on a voyage from the Cape to Batavia, also proved fruitless.

In 1658, on 1 January, the vessels 'Waekende Boey' (*The Watch Buoy*), commanded by Samuel Volckertszoon, and the 'Emeloort', Captain Aucke Pieterszoon Jonck, left Batavia on a similar errand, which was equally abortive. Improved charts of the west coast of Australia were, however, the result of this expedition. During the search, one of the boats of the 'Waekende Boey', being accidentally separated from her during bad weather, was thought by those on board to have been lost, and was consequently abandoned; part of its crew, however, after almost incredible sufferings from exposure, hunger, and thirst, managed to reach Java in safety.

In the same year the ship 'Elburg', commanded by Jacob Pieterszoon Peereboom, brought in further reports about the south-west coast, or 'Land van de Leeuwin', where she had been at anchor 'in latitude 33°14' south under a projecting point', probably in Geographe Bay, and where some of her crew had been ashore.

In February 1678, the ship 'De Vliegende Zwaan' (*The Flying Swan*), commanded by Jan Van der Wall, coasted the north-west of Australia on her voyage from Ternate to Batavia.

In 1688, on 5 January, the first Englishman landed on the coast of Western Australia, in the person of William Dampier, who, by the publication of further authentic information regarding 'New Holland', supplemented the accounts of Tasman's discoveries made in 1642-3, which had been already previously made known, in 1671 in the diary kept by the surgeon of Tasman's vessel, and subsequently in Tasman's own notes in 1674. Dampier appears to have left Brazil as supercargo in a small vessel called the 'Cygnet', commanded by a friend of his named Swan, and intended for the trade with South America; the crew, however, mutinied and became buccaneers, and eventually Captain Swan and about forty of those who remained faithful to him were abandoned to their fate on one of the Philippine Islands. Dampier remained in the vessel which, after her extended voyage, appears to have required overhauling. Their occupation rendering an unfrequented spot desirable for the purpose, the buccaneers steered for the coast of New Holland, and on 4 January

1688, anchored in a bay in the north-western corner of King Sound, in the present West Kimberley District, now known as Cygnet Bay, where they beached the vessel and executed the necessary repairs. During their stay here (and they did not leave until 12 March) Dampier, who does not seem to have found the society of the buccaneers or their mode of life congenial, made a careful exploration of the surrounding country. He succeeded in leaving the vessel at the Nicobar Islands, from which he reached Sumatra in a canoe, and eventually, after many adventures, arrived in England. It has been pointed out as a singular circumstance that Cygnet Bay, where the 'Cygnet' was beached in 1688, was the one spot out of the whole Western Australian coast subsequently selected by the W.A.S.N. Co.'s steamers for scraping and cleaning their bottoms; and it certainly seems strange, unless the place was previously known, that the 'Cygnet' should accidentally have hit upon the one place on the whole coast best suited for the purpose.

In 1696 Commander Willem de Vlaming, in a vessel called the 'Geelvinck' (*Yellow Bunting*), conveying two other vessels, the 'Nyptangh' (*Pincher*), commanded by Captain Gerrit Collaert, and 'Weseltje' (*Weazel*), under Commander Cornelis de Vlaming, son of the leader of the expedition, was ordered by the Dutch East India Company to carefully examine the western coast of New Holland for traces of a vessel named the 'Ridderschap Van Holland' (*Chamber of Knights of Holland*), which had left Holland for the Dutch colonies two years previously (1694)⁽⁸⁾ and had never reached its destination. On the morning of Christmas Day, 1696, land was sighted, and on 29 December the ships anchored off the island of Rottneest, which the next day they explored, giving it the name 'Rottenest' from the abundance of rats' (wallabies) nests found upon it. On the morning of 5 January, Vlaming landed on the mainland, probably somewhere about what is now called Cottesloe Beach, with a party of eighty-six men, fully armed, and marching eastwards, came to what is described as 'a large basin of brackish water, which we afterwards found was a river'. On the banks of this they found a hut 'of a worse description than that of a Hottentot', also footprints and other evidences of the inhabitants, of whom, however, they were unable to catch a glimpse. On the following day the party divided into three, and went in different directions—one north, one south, and the third four miles further east. On 9 January the ships were brought in and anchored close off the mouth of the river, which Vlaming himself is said to have explored for a distance of fourteen or sixteen leagues. It is mentioned that he caught some smelts, while on the surface of the water were seen numerous black swans. Of this hitherto unknown prodigy, the fabulous black swan, Juvenal's '*Rara avis in terris nigroque simillima cygno*', Vlaming captured several specimens, three of which were taken alive to Batavia. The river was named by Vlaming the Swan River (*Swaenerevier*), and on 13 January, having, as it is reported, found 'neither good country nor seen anything worthy of note', the expedition proceeded slowly northwards, examining the shore carefully with the boats for traces of the lost ship, and occasionally landing and making short excursions inland. On 4 February Shark Bay was reached and carefully explored. The tin plate of Dirk Hartogs was discovered and, leaving a somewhat similar memorial of their own visit, the ships, on 12 February, proceeded as far as North West Cape, from which, on 21 February, they steered a direct course to Batavia. Burgomaster Nicolaas Witsen complained that Vlaming, being addicted to drink, did not make such a thorough exploration of the country as he was instructed to do.

In 1699 Dampier—who, since his arrival in England, had published accounts of his previous adventures and discoveries in New Holland—was sent by William III in the 'Roebuck', under an Admiralty Commission, to make further explorations on the north-west coast of that country, and to solve, if possible, the question as to whether it was a continent or, as was then generally supposed, only a succession of islands. On 1 August 1699, he entered and named Shark Bay and here he spent eight days in a fruitless search for water. Frequent further attempts for a like purpose, as he proceeded slowly northward up the coast, were also of no avail, and only once was water obtained in a sufficient quantity to replenish his supply. So greatly disgusted was he with the extreme sterility and waterless aspect of the coastal country—he never appears to have explored any distance inland—that he abandoned the object of his mission and proceeded straight to New Guinea. His

(⁸) Leupe, p. 360.

unfavourable comments on the barren appearance of the land and its wretched poverty-stricken inhabitants—whom he described as ‘the miserablest people in the world’—militated strongly against further investigation being made, and from that time to 1770—when Cook, landing at Botany Bay, discovered and took possession of the more fertile regions of the eastern coast—Australian exploration, so far as all events as England was concerned, appears to have been neglected. During this voyage Dampier discovered and roughly charted the Dampier Archipelago, and added much to the knowledge of the habits and customs of the Aborigines and the natural history of the country. He described the kangaroo as ‘a strange creature like a racoon, which used only its hind legs, and, instead of walking, advanced by great bounds or leaps, of twelve or fifteen feet at a time’.

In March 1705, a small Dutch exploring squadron of three vessels, the ‘Vossenbosch’ (*Foxwood*) under Maarten Van Delft, ‘De Wayer’ (*The Fan*) under Andries Rooseboom of Hamburg, and ‘Nieuw Holland’ under Pieter Hendrikszoon of Hamburg, left Timor to explore the north-western coast of New Holland, and an improved chart of Tasman’s explorations was made.

In 1711 a Dutch vessel named the ‘Zuytdorp’ (*The South Village*) is said to have been wrecked on the Abrolhos Islands.

In 1727, on 9 June, a Dutch vessel, commanded by Jan Steyns, supercargo, Jan Nebbens, the ‘Zeewyck’, so named after a small fishing village in Holland, was wrecked on a reef off the Houtman Abrolhos, near the island to which, in 1840, Captain Stokes gave the name of Gun Island, from the fact of his finding a small brass three-pounder gun on it, with other relics of the wrecked vessel. Leaving the island on 26 March 1728, the remainder of the crew of the ‘Zeewyck’, eighty-two in all, taking with them ten chests of treasure valued at 315,836 florins, reached Batavia in safety, on 21 April, in a small boat built out of fragments of the wreck. A boat previously despatched in charge of the upper steersman, Pieter Langeweg, with a crew of eleven, was never again heard of. Numerous relics of the wreck have since been discovered, including pieces of ordnance, cannon balls, clay pipes, broken gin bottles, tumblers, wine glasses, iron lamps, snuff-box, etc. and several silver and copper coins bearing date 1720 and 1722.

Later in the eighteenth century, *inter alia* in 1755 and 1765, the west coast of Australia was again visited by Dutch ships, but the information gained by these visits is unimportant.

On 18 March 1772, Captain de St Alouarn, in the flute ‘Le Gros Ventre’, anchored off Cape Leeuwin. After him the St Alouarn Islands were named by d’Entrecasteaux, in December 1792.

In 1791, on 1 April, Captain George Vancouver, who had previously served as a midshipman under Cook, left Falmouth in H.M.S. ‘Discovery’, accompanied by Captain Broughton, in H.M.S. ‘Chatham’, on his way to north-west America. On 26 September he arrived at Lyon’s Land, off Chatham Island, situated close to the mainland off Point Nuyts, about one hundred miles south-east from Cape Leeuwin. Making a careful survey of the coast as he proceeded eastward, on the night of 28 September he anchored in a sound, to which he gave the name of King George the Third Sound. Landing on 29 September, the birthday of the then Princess Royal, after whom the inner harbour was named, he formally took possession of the country from the land seen north-westward of Cape Chatham, so far as he might explore its coasts. Here he remained until 11 October, being especially minute in his survey and examination of its outer harbour, and the adjacent country. Before leaving he deposited on Point Possession a bottle containing a parchment record of his visit, and a similar one on Seal Island. Continuing his voyage, adverse weather greatly interfered with his exploration of the coast which, at Termination Island, he eventually quitted for America. Archibald Menzies was naturalist to the expedition.

In 1792 a French expedition of two vessels, one ‘La Recherche’, commanded by Antoine Raymond Joseph de Bruni Chevalier d’Entrecasteaux, and the other called ‘L’Esperance’, Captain Huon de Kermadec, appeared on the south-western coast, looking for traces of Count Jean Francois La Perouse who, early in 1788, had left Sydney with the vessels ‘Boussole’ and ‘Astrolabe’, the latter commanded by Captain de Lange, and whose fate remained a mystery for nearly forty years, until 1825, when Captain Peter Dillon, of H.M.S. ‘Research’, discovered remnants of the wrecks on Vanikoro, or Matli-

koro, an island to the north-west of the New Hebrides, being the southernmost of the Santa Cruz group. D'Entrecasteaux died on board his ship 'La Recherche' on 20 July 1793. Monsieur Labillardiere was naturalist to the expedition.

In 1800, on 27 August, Chr. Dixon, ship 'Elligood', was in Oyster Harbour, King George Sound. He probably removed Vancouver's bottle and record memorandum from Seal Island.

In 1801, on 18 July, Captain Matthew Flinders left Spithead in the 'Investigator', the old 'Xenophon', a sloop of 334 tons. He reached, on 6 November, what he denominated Cape Leeuwin, as being the south-western and most projecting 'part of Leeuwin's Land', and commencing from there to King George III Sound, where he arrived on 9 December, he explored the intermediate coast, charted Princess Royal Harbour, established friendly relations with the Aboriginal inhabitants, and subsequently carefully examined the whole of the southern coast of the continent as far as Bass Straits. On board the 'Investigator' was Robert Brown, the well-known naturalist; also William Westall, the famous painter; whilst John Franklin, who afterwards became Governor of Van Diemen's Land, and finally ended his career as the celebrated, but unfortunate, Arctic explorer, was one of her junior lieutenants. Flinders' search for Vancouver's record bottles was unsuccessful, but he discovered on the east side of Oyster Harbour a garden and a piece of sheet copper inscribed 'August 27, 1800. Chr. Dixon—ship Elligood'. He also placed a record bottle on Seal Island. He left the Sound on the morning of 5 January 1802. Flinders readopted the original name of the continent *Terra Australis*, 'to include New South Wales, New Holland, and the adjacent isles, including that of Van Diemen'.

In the British Patent to the first governor of New South Wales a meridian nearly corresponding to the ancient line of separation between *New Holland* and *Terra Australis* was made the western limit of that colony, and was fixed at 135°E. longitude, 'from which the British Territory extends Eastwards to the islands of the Pacific or Great Ocean: its Northern limit is at Cape Yorke; and the extremity of the Southern Van Diemen's Land is its opposite boundary'. In 1814, upon Captain Flinders' suggestion, the continent received its name of Australia, 'as being', as he said, 'more agreeable to the ear, and an assimilation to the names of the other great portions of the earth'.

In 1801–3 an exploration of the Western Australian coast was made by a French expedition of three vessels—the 'Geographe', commanded by Commodore Nicolas Baudin; the 'Naturaliste', by Captain Hamelin; and a small vessel of thirty tons, called the 'Casuarina', under Lieutenant Louis Claude Desaulses de Freycinet. After a brief preliminary visit they proceeded to Timor; then returning southward, they anchored off the mouth of the Swan River (Riviere des Cygnes) which, between 17 and 22 June 1801, they explored, probably to a short distance beyond the junction of the Helena River, intending to trace the source of the main stream. The leader, M. Heirisson (an *Enseigne de vaisseau*), was, however, reluctantly obliged to abandon the latter object, owing to their provisions running short. The name of one of their party being Moreau, the name Moreau Inlet was given to the Canning River, and that of their leader to the Heirisson Islands, on which the present Perth Causeway is constructed, where they first caught sight of the black swans. They appear to have climbed Mount Eliza, and described the view obtained from there as particularly striking and beautiful. The change of soil about the present site of Guildford was noticed, and its fertility favourably commented upon. Eating, as previously Vlaming's men had also done, of the zamia nut, which they described as a fruit like a chestnut, some of them did not fail to experience the sickness which it subsequently causes. At the point where they abandoned their upstream journey, a distance, so it is stated, of about twenty leagues from its mouth, the river is described as being narrow, and only about seven or eight feet deep, the water being still salt. The vessels engaged on this expedition examined, so far as possible, the whole of the Western Australian coast, made a survey of Princess Royal Harbour, and took especially minute notes of the coast and land in the vicinity of the Swan River, and at Rottnest Island, where they landed, and the salt lakes of which they called *Etangs Douvailedaily*, whilst the species of wallaby they found there received the name of *peramele a long nez*. Further, they explored Shark Bay and also some of the islands about Admiralty Gulf. M. Leschenault, the celebrated

botanist, after whom the Leschenault Estuary, near Bunbury, and Cape Leschenault, near the Moore River, were called, was attached to this expedition, as was also M. Francois Peron, the zoologist, from whom Point Peron, South of Fremantle, received its name, whilst M. Bailly was the mineralogist. According to Captain King, 'Peron and Lesueur in Baudin's voyage extended their inquiries chiefly among the branches of zoological research; but in that expedition each department of Natural History had its separate collector, and the names of Leschenault, de la Tour, Riedle, Depuch, and Bailly will not be forgotten'.

In 1818, Louis de Freycinet, this time as captain of the 'Uranie', was again exploring off the western and north-western coasts. A minute geographical survey of Shark Bay, called by the French 'la baie des Chiens Marins', was this time completed by M. Duperrey. An account of this voyage is given by Gaudichaud, the botanist, in his 'Voyage Botanique autour du monde'.

In 1818-22, Lieutenant Phillip Parker King, in the first place in the colonial cutter 'Mermaid', eighty-four tons, and secondly in the brig 'Bathurst', 170 tons, both vessels having been specially purchased for the purpose in Sydney, carried out a careful survey of the greater part of the western coast from King George III Sound to Cambridge Gulf, and continuing along the northern coast. King's instructions from the Admiralty were to explore the yet undiscovered coast of New Holland and to complete, if possible, its circumnavigation, also to examine minutely all gulfs and openings in the northern coast for any river on that part likely to lead to an interior navigation of the continent. Mr Allan Cunningham was the botanical collector of the party, and one of the two masters' mates was Mr John Septimus Roe, afterwards the first Surveyor General of the Swan River Colony. King's charts and sailing directions still formed the basis of those in use a century later. He died a Rear Admiral in 1855.

In 1820, the 'San Antonio' (Captain Hemmans), an American trading brig, visited King George Sound, probably in search of water, sometime in the month of December.

In June 1825, the French vessels 'Thetis' and 'Esperance', commanded respectively by De Bougainville and du Camper, were cruising about the southern coast. As it was at that time strongly suspected that France, recognising the maritime strength derived from the possession of suitable colonies, desired to found a settlement in Australia, Lieutenant-General Sir Ralph Darling, then Governor of New South Wales, acting under instructions from the Earl of Bathurst, (to whom, however, in his despatch of 10 October 1826, he reported unfavourably on King George Sound and Shark Bay for settlement, offering the opinion that the French would find it difficult to maintain themselves on so barren a coast) sent Major Lockyer, of the 57th Regiment, with a detachment of the 39th Regiment, and a party of convicts, numbering all told about eighty, to found settlements at Western Port and the Sound. The expedition, consisting of H.M.S. 'Fly' (commanded by Captain F. A. Wetherall) and the Colonial Government brigs 'Amity' (commanded by Lieutenant Festing) and 'Dragon', sailed from Sydney on 9 November 1826. The 'Amity' reached King George Sound on 25 December and the proposed settlement was established.

The troops and convicts stationed at King George Sound were, however, about four years afterwards withdrawn by order of the Home Government and the settlement was annexed to that on the Swan River by proclamation dated 7 March 1831.

In 1826, Captain James Stirling, R.N., when commanding H.M. frigate 'Success', was ordered to New South Wales on a special service in connection with the removal of the penal settlement from Melville Island on the north coast, which the monsoon prevented him from at once undertaking. He pointed out to Governor Darling the advantages of Swan River for settlement, and was consequently authorised in the meantime to explore that part of Western Australia which King, on the ground that it had already been visited by the French, had omitted from his survey. On 17 January 1827, having on board Mr Charles Fraser, the Colonial Botanist of New South Wales, he sailed from Sydney with a view to make up the French survey deficiencies and to examine the country in the vicinity of the Swan River. The result of his mission was detailed in a report⁽⁹⁾ forwarded by Captain Stirling to His Excellency General Darling on 18 April 1827.

⁽⁹⁾ The 'Narrative of Operations' from Captain Stirling's report is shown in full in the *Appendix*.

Both Captain Stirling and Mr Fraser evidently were greatly impressed with the capabilities of the newly examined country, the latter making the following entry in his journal:

'In delivering my opinion on the whole of the lands seen on the banks of the Swan, I hesitate not in pronouncing it superior to any I have seen in New South Wales, Eastward of the Blue Mountains, not only in its local situation, but in the many existing advantages which it holds out to settlers, viz.:

- 1st. The evident superiority of the soil.
- 2nd. The facility with which settlers can bring their farms into a state of culture from the open state of the country, the trees not averaging more than ten to the acre.
- 3rd. The great advantage of fresh-water springs of the best quality, and consequent permanent humidity of the soil—two advantages not existing Eastward of the Blue Mountains.
- 4th. The advantage of water carriage to their own doors, and the non-existence of impediments to land carriage.'

The favourable report made by Captain Stirling, backed up by the glowing description given by Mr Fraser, induced General Darling to recommend the Home Government to at once establish a settlement.

To Captain James Stirling, who appears to have conveyed the recommendation in person to England, the charge of organising the expedition was entrusted by the English Government.

No commission was at that time issued to Captain Stirling as Lieutenant-Governor of Western Australia, who instead received a letter of appointment, bearing date 30 December 1828; the earliest commission issued to him was that appointing him to be Governor and Commander-in-Chief, which was dated 4 March 1831. The reason for the adoption of this course is explained in the despatch⁽¹⁰⁾ from Secretary Sir George Murray, addressed to him on the same date as the first letter of appointment, and instructing him as to the course to be followed in the formation of the then proposed settlement.

In 1829, on 2 May, Captain Chas. H. Fremantle, of H.M.S. 'Challenger', who, under instructions from the Admiralty, had been despatched from the Cape of Good Hope on 20 March of that year by Commodore Schomberg, of the Indian Squadron, for the purpose, anchored off the mouth of the Swan River and, hoisting the British flag on the south head, took formal possession in the name of His Majesty King George IV of 'all that part of New Holland which is not included within the territory of New South Wales'.

Exactly one month later, on 2 June, the hired transport 'Parmelia', 443 tons, J. H. Luscombe, commander, arrived in Cockburn Sound, having on board Lieutenant-Governor Stirling, his family and other intended settlers, numbering in all sixty-nine. Six days later, on 8 June, her consort H.M.S. 'Sulphur', arrived with a detachment (Light Company No. 2) of the 63rd Regiment, consisting of three subalterns, 1 staff officer, 2 sergeants, 3 corporals, 1 bugler and 46 men, under the command of Captain F. C. Irwin. Having left a party of about half its strength to protect the stores, settlers, etc. on Garden Island, the remainder of the force, on 17 June, disembarked, and encamped on the north bank of the Swan, subsequently named Rous Head, relieving the party of seamen and marines from the 'Challenger', which had been left to protect the British flag planted there by Captain Fremantle during the preceding month. With the landing of the immigrants from the 'Parmelia', the history of Western Australia, as a British Colony, begins.

An interesting account of the arrival of the first settlers was contained in a despatch sent by Captain Fremantle to the Admiralty, from Trincomalee, on 8 October 1829.⁽¹¹⁾

The names which were originally given to the most prominent features on the western coast are still in most instances retained and serve to perpetuate the memory of many of the earliest explorers, their vessels, and the principal officers of their crews.

⁽¹⁰⁾ For despatch in full, see the *Western Australian Year Book*, 1902-04, (Old Series), p. 16.
⁽¹¹⁾ For despatch in full, see *ibid*, pp. 18-20.

CHAPTER II—PHYSICAL FEATURES, CLIMATE, FLORA AND FAUNA

Part 1—Physical Features and Geology

Contributed by

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The development of any country depends on its natural resources and the industry of its people, and there can be few more important investigations for any country than those dealing with the productive capacity of its territory. Natural resources—be they power, mineral, or soil resources—are dependent entirely on the climate, physical features and geology. Looking at the pattern of development of Western Australia we see that for nearly seventy years after the foundation of the Swan River Colony in 1829 agricultural production barely kept pace with the requirements of the small population. The discovery of gold in the 1890s, however, led to a period of rapid expansion and Western Australia became one of the major gold-producing areas of the world, and with this increase in mining production there was a corresponding expansion of the agricultural and pastoral industries. We are now experiencing an expansion of our secondary industries. Today, with the realisation of the base metal mineral potential of Western Australia—the proven deposits of iron ore, nickel, bauxite, black sands, oil and natural gas and the high probability of further discoveries—we are in another period of unprecedented development. The mineral discoveries of recent years in Western Australia have stimulated the mining industry not only in Western Australia but throughout the whole of Australia. The Western Australian mineral discoveries of the late 1960s have been accompanied by a corresponding increase in our secondary industries and the opening up of formerly sparsely populated areas, particularly in the Pilbara. Western Australia has, to date, been deficient in power resources, but this deficiency will probably be remedied by the discovery of large natural gas reserves near the southern margin of the North-West Shelf. In each of these phases of development we can see the dominating influence of the geological environment so that geology, from being relatively unknown and the Cinderella of the sciences, has now become known to all.

The nature of the rocks underlying any region is one of the major factors controlling topography, soil, and mineral resources. The latter is self-evident. The soil, on which we are so dependent, was formed by the weathering of the underlying rocks and many of its characters are due to the parent rock material. Much research has been carried out into trace element deficiencies in soils and the application of the new knowledge has produced astounding results as far as land utilisation is concerned. At first sight it would seem fantastic to think of the underlying rocks being in any way responsible for malnutrition of stock, but when it is demonstrated that the malnutrition is due to the lack of some minor element in the fodder which is due to its deficiency in the soil, a deficiency which, in its turn, is due to the absence or relative absence of such elements from the parent rocks from which the soil was derived, the significance of the geological environment becomes evident. Topography which is important in connection with land utilisation, water conservation, power (hydro-electric) resources, and in affecting climate, soil erosion, coastal erosion, transport routes, harbours, and so on is also dependent to a great extent on the nature and structure of the underlying rocks.

It is appropriate therefore that we should consider here the physical features and geology of Western Australia since they, together with the climate, are the primary controls of our soil, mineral, water and power resources, on which our existence and future development are entirely dependent.

PHYSICAL FEATURES

In the broadest way this State can be divided into two physical regions: (i) a tableland (the *Great Plateau*) in various stages of dissection occupying the whole of the interior of the State; (ii) a low-lying narrow strip (the *Coastal Plains*) running almost continuously along the coast from near Albany to Broome. A third physical region, the *Scarplands*, separating the Coastal Plains from the Great Plateau, may be distinguished. This, although only a narrow belt, is a significant one in the southern part of the State because of its importance in connection with the water conservation schemes on which the metropolitan area, the mining fields in the vicinity of Kalgoorlie, the intervening agricultural and pastoral districts, the irrigation areas on the coastal plains south of Perth, and more recently the wheat belt along the Great Southern Railway, are dependent.

The Great Plateau

The Great Plateau which occupies more than 90 per cent of the area of the State varies considerably in elevation. In its highest parts (in the North-West) it attains a height of approximately 4,000 feet above sea-level. The greater part is, however, below the 2,000-ft contour and its average elevation is of the order of 1,000 to 1,500 feet above sea-level. Although there is this considerable variation in level the changes are so gradual that the plateau character of the country is not obscured and for the most part it may be regarded as having a vast gently undulating surface. Occasional hills (monadnocks, which are remnants of a previous cycle of erosion) rise above the general surface of the plateau.

The Great Plateau may be conveniently subdivided into an area of exterior drainage (where there are definite rivers which flow to the sea), an area of interior drainage (where such water as flows passes into inland basins), and two areas of no surface drainage but which, if they had drainage, would belong to the exterior drainage system. The area of exterior drainage can be marked out by connecting the source of the streams which flow to the sea and if this is done it will be seen that the width of the exterior drainage belt varies considerably. Thus in the Kimberley and North-West Divisions some of the rivers are hundreds of miles long, but in the south-west part of the State many of them are comparatively short. The areas of no surface drainage are in the north of the North-West Division along the Eighty Mile Beach from the mouth of the De Grey River to the north of Broome, and on the Nullarbor Plain in the south-eastern corner of the State. The remainder of the country forms the interior drainage area.

In the area of exterior drainage the dominant feature of the extreme south-west and the northern part of the plateau is a reticulate pattern of rather deeply-incised watercourses. In the southern part of the State these deeply-incised watercourses where they pass from the plateau to the coastal plains are of great significance (as has already been mentioned) in connection with water supply schemes. Elsewhere in the State the marginal portion of the Plateau is drained by rivers that flow to the sea only at times of exceptional rainfall and, speaking in the most general way, have courses at right angles to the coast.

The area of interior drainage is arid and practically riverless. Small creeks run from the higher parts of the country but they either disappear on the extensive flats or reach the shallow basins which are termed salt or 'dry' lakes, the term 'dry' being used since these so-called lakes are free from water except after fairly heavy or long-continued rain. These 'lakes' are generally elongated, narrow, and often winding salt-encrusted flats arranged in long, more or less connected streams. After heavy rain they are covered with a thin layer of water and, after unusually heavy rain, water has been known to flow southwards from one to another of the 'lakes' of a string, except towards the western margin of the plateau where the drainage is to the west. It is evident that these elongated 'lakes' are the remnants of an old river system developed during a more humid period. The salt lakes are of some economic significance since, on the evaporation of the water, common salt and other substances such as gypsum are deposited on the floor of the lake. The gypsum, which crystallises earlier than the common salt, is generally blown from the damp surface of the dried-up lake and deposited as dunes of 'seed gypsum' on the

leeward (eastern) side of the lake. These dunes are utilised, for example at Lake Seabrook north of Yellowdine, as a source of gypsum for plasters. Common salt, which separates later, forms a crust on the floor of the lake when it has been completely dried up and such salt deposits are exploited, for example at Lake Lefroy near Widgiemooltha. In a few of the Western Australian salt lakes significant deposits of alunitic clay have been discovered which have been worked as a source of potash.

Over a large portion of the interior drainage part of the Great Plateau there are extensive sand-plain soils overlying a hard laterite ('ironstone') layer, which is of the order of up to fifteen feet in thickness, below which lies an intensely weathered zone from which most of the nutrient elements so important for plant growth have been leached. These more recent geological formations will be discussed in the section of this Part dealing with geology, but we may note here the significance of this lateritic profile (sandy soils near the surface, 'ironstone' a few feet below, and completely kaolinised rocks still deeper) so far as soil fertility is concerned. This lateritic profile is the result of long-continued weathering processes which have resulted in almost complete leaching of the valuable nutrients and as a result soils developed in any part of this profile are generally very poor in character. It is only where erosion has cut through the lateritic profile and still younger soils have been formed by weathering of the underlying rocks that the better soils are found. As has been mentioned, however, with recent studies of trace element deficiencies much can be done with these 'light' soils by the addition of small quantities of suitable trace elements such as copper and molybdenum.

The areas of no surface drainage include the Eucla Division and portions of the Eastern Division of the State. This area is occupied largely by horizontal or nearly horizontal limestones of the Nullarbor Plain and the drainage here is sub-surface in character through subterranean streams and caverns in the limestone. The Nullarbor Plain is an extensive monotonously level plain standing at a height of about 600 feet above sea-level. The Western Australian part of the Nullarbor Plain is bordered to the south by a narrow coastal plain but further east, at the head of the Great Australian Bight, in South Australia, this coastal plain is absent and the southern edge of the Plain is truncated by cliffs which rise almost sheer for 200 to 400 feet above sea-level.

The hills of the Great Plateau are of two kinds, ridged and table-topped. In the southern half of the State the ridged hills, a few of which rise as much as 1,500 feet above their surroundings, are generally elongated in a north-north-west direction, reflecting in their trend the structure of the underlying rocks. The table-topped hills are seldom more than 200 feet above the general level. They are capped with a sub-horizontal layer of laterite ('ironstone') and bounded by low cliffs, in many places undercut, which are known in Western Australia as 'breakaways'. The table-topped hills are relics of erosion of a former laterite-covered peneplain (the *Darling Peneplain*) which was uplifted in Pliocene times to form the Darling Plateau and has subsequently been subjected to erosion under semi-arid conditions. The ridged hills on the other hand are elongated monadnocks which, being cored by resistant rocks such as jasper bars, withstood erosion and so rise above the general level of the remnants of the laterite-covered Darling Plateau.

The Great Plateau slopes down very gradually to the south and west. The downward slope to the south is interrupted by a narrow broken chain of rugged hills, the Stirling and Mount Barren Ranges which rise to heights of from 1,000 to 3,600 feet above sea-level. The western margin of the Plateau is, in the south, formed by the 'Darling Range' which, being merely the dissected margin of the Plateau, is much better called the *Darling Scarp*. This Darling Scarp is clearly defined between latitudes 31° 30' S. and 33° 30' S., i.e. between Moora and Donnybrook, but it is difficult to recognise farther north or south. In the Kimberley Division the mountain ranges are the relics of erosion between the deeply-incised rivers and in this region the highlands of the plateau terminate abruptly along a steep, deeply-indented coastline.

The Coastal Plains

Bordering the Great Plateau are the Coastal Plains which vary in width. The *Swan Coastal Plain* which extends from the neighbourhood of Perth to near Busselton averages about fifteen miles in width and is divisible into the following belts: a narrow band of moving sand dunes along the coast; a zone, averaging three or four miles wide, of sandy limestone which rises in places to heights of 100 to 200 feet above sea-level; a zone three or four miles wide of loose sand fixed by vegetation; and, abutting against the Scarp which forms the western margin of the Plateau, a zone of clayey soils of about the same width. A strip of low plain extends along the coast at intervals as far north as King Sound and coastal plains of some width occur near Port Hedland and Exmouth Gulf. A narrow plain fronts the cliffs of the Great Australian Bight for some distance and also occurs in other places along the south coast.

The coastline of Western Australia, some 4,350 miles in length, is broken by capes between Wyndham and Broome, between Port Hedland and Shark Bay, and between Cape Naturaliste and Israelite Bay. The intervening parts are comparatively featureless.

It has only been possible here to briefly outline the principal physical features of Western Australia and for a fuller description of the physiography of this State the reader should consult J. T. Jutson's 'Physiography (Geomorphology) of Western Australia' (*Geol. Surv. West. Aust. Bull.* 95).

GEOLOGY

More than two-thirds of Western Australia is occupied by the ancient Australian Precambrian Shield which is composed of a complex of igneous, metamorphic and sedimentary rocks formed more than 600 million years ago. Most of our mineral deposits of economic importance, except coal, oil, natural gas and water and superficial deposits such as lateritic iron ore and bauxite deposits and black sand and other alluvial accumulations, occur in these Precambrian rocks. The remainder of the State is occupied by sedimentary basins in which Palaeozoic and later sediments are developed. It is in these younger sedimentary basins that artesian water, coal, oil and natural gas are likely to occur. Finally there are the still younger superficial deposits—laterites, salt-lake deposits, and soils on which much of the economy of this country depends. It will be convenient therefore, in outlining the geology of the State, to consider it under the three main headings:

- (a) The Precambrian basement;
- (b) The sedimentary basins;
- (c) The superficial deposits.

The distribution of the solid rocks (omitting superficial deposits) is shown in the accompanying map (see page 15).

The Precambrian Basement

This includes the Archaean and Proterozoic rocks. The Archaean is a complex of crystalline igneous and metamorphic rocks, dominantly granites and gneisses with minor amounts of schistose metamorphosed acid and basic volcanics and sedimentary formations. In places, particularly in the North-West and Kimberley Divisions, this Archaean complex is overlain unconformably by sedimentary and volcanic rocks of Proterozoic age which do not exhibit the extensive metamorphism so characteristic of the older Archaean complex. The time-boundary between the younger Precambrian (Proterozoic) and older Precambrian (Archaean) is approximately 2,200 million years ago. Within the different areas occupied by the Precambrian rocks the same generalised sequence can be distinguished.

In the Kimberley the oldest rocks are metamorphosed igneous and sedimentary rocks intruded by granite and carrying in places auriferous and base metal ore deposits, and these are overlain by un-metamorphosed sediments with basic igneous intrusives. The Precambrian age of all these rocks is evidenced by the fact that in the East Kimberley they are overlain by sedimentary rocks containing fossils of Cambrian age. This is the only area in

Western Australia where the Precambrian age of the rocks of this crystalline complex can definitely be proved on stratigraphical evidence alone. In the southern part of the State we find a similar sequence of crystalline schists with intrusive granites and by lithological correlation (which is not a very sound method) we assume that they are Precambrian although they cannot actually be traced through from the Kimberley. We do know that in the Carnarvon Basin these gneisses, schists and granites are older than the Devonian, which unconformably overlies them, and in the Perth Basin they are older than the Permian. During recent years the Precambrian age of these rocks has been confirmed by actual age determinations based on the decay of radioactive elements which occur in them. This work indicates that the bulk of the massive granitic intrusions of the southern part of the State and in the Pilbara crystallised from a molten state some 2,700 million years ago. Some, however, such as those in the vicinity of Albany and along the south coast, are much younger, being emplaced approximately 1,100 million years ago.

The Precambrian sequence in the North-West Division appears to be the most complete that is present in Western Australia and, from oldest to youngest, is as follows.

The *Warrawoona Succession*, which consists mainly of greenstones and green schists which were, prior to the intense folding and metamorphism to which they were subjected after deposition, basaltic lavas and tuffs with interbedded chemically deposited secondary rocks (jaspilites or banded iron formations) in the upper part of the sequence. These jaspilites have been the protorees of important iron-ore deposits such as those of Mount Goldsworthy. The Warrawoona Succession is overlain by a succession (the *Mosquito Creek Succession*) of sedimentary rocks which have also been intensely folded and metamorphosed to various types of platy-structured schists, slates and quartzites. Both the Warrawoona and Mosquito Creek Successions are invaded by granitic igneous rocks emplaced approximately 2,700 million years ago and both carry auriferous ore-bodies possibly genetically related to the intrusive granites. End-stage products of these granites are the very coarse-grained pegmatites which are important carriers of tantalum (in tantalite), beryllium (in beryl), lithium (in spodumene and lepidolite), and tin (in cassiterite). All of these rocks in the North-West Division—the Warrawoona and Mosquito Creek Successions and the granites intrusive into them—are therefore of Archaean age and have been called the *Pilbara System*. Still younger sedimentary rocks such as conglomerates, sandstones, shales and banded iron formations with interbedded basic igneous rocks, were deposited unconformably on the highly-folded, granite-intruded Pilbara System. This thick succession consists of a number of distinct groups. The three lower groups (the *Fortescue*, *Hamersley* and *Wyloo Groups*) are of Lower Proterozoic age as the youngest (the Wyloo Group) is intruded by granite aged approximately 1,700 million years. The two upper groups (the *Breshnahan* and *Bangemall Groups*) are of Middle and Upper Proterozoic age, respectively. Of these Proterozoic rocks the Hamersley Group is most important economically since most of the iron-ore deposits of the Hamersley and Ophthalmia Ranges occur within, or have been derived from, the thick jaspilites (banded iron formations) within this group. Except in occasional narrow belts marginal to the Archaean blocks, the Proterozoic rocks have not suffered the intense folding that affected the older rocks and consequently they are generally flat-dipping to horizontally bedded un-metamorphosed sediments. Such sediments cover very extensive areas in the North-West (see Geological Map of Western Australia on page 15) and they are similar in many respects to the flat-dipping Proterozoic sediments which cover the plateau country of the North Kimberley. The final episode in the Precambrian history of the North-West was the intrusion of dolerite dykes and sills into all of the earlier rocks.

Coming to the southern half of the State we find a similar sequence to that in the North-West. In the part of the Precambrian Shield extending south of latitude 26° S. the oldest rocks that are recognised are the greenstones of the various gold-mining fields which occur in comparatively narrow belts elongated in a general NNW. direction (see map, page 15). These greenstones, which are for the most part metamorphosed basaltic lavas, contain interbedded ultrabasic lavas and jaspilites and are overlain by metamorphosed sedimentary rocks (generally referred to as whitestones). This System of rocks is the *Kalgoorlie-Yilgarn System*. From the mining point of view it is most important since

the auriferous ore deposits of the main mining fields are confined to it, as are the known nickel deposits. It also contains, in the jaspilites, important iron-ore deposits such as those of Koolyanobbing in the Yilgarn. It appears to be the equivalent of the Pilbara System of the North-West. After the formation of the Kalgoorlie-Yilgarn rocks they were intensely compressed into tightly closed folds with NNW.-trending axes. During this period of intense earth-movement approximately 2,900 million years ago granite magma concordantly intruded these older rocks or alkaline solutions permeated them, converting them into granitic gneisses which occupy the bulk of the southern half of Western Australia. Subsequently, at about 2,700 million years ago, granite magma was again intruded as in the North-West, so the Kalgoorlie-Yilgarn System in the southern half (the Yilgarn Block) of the State appears to be the equivalent of the Pilbara System of the Pilbara Block. This completes the Archaean sequence. The Proterozoic is represented by a narrow strip of slightly altered, steeply-dipping sedimentary rocks along the Darling Scarp, flat-dipping sediments on top of the older crystalline rocks of the western part of the Yilgarn Block as at Watheroo, Yandanooka and the Billeranga Hills near Morawa, and the metasedimentary rocks of the east-west Stirling and Mount Barren Ranges along the south coast. Proterozoic igneous activity is represented by Early Proterozoic layered complexes and Late Proterozoic basic dykes. The former, aged 2,420 million years, take the form of basic-ultrabasic layered complexes, such as the large east-west dykes of the Norseman-Laverton greenstone belt which have some prospects for the occurrence of nickel and chrome deposits. The latter are dolerite dykes which, like those in the North-West, intruded all of the Precambrian rocks about 550 million years ago. They occur throughout the Precambrian shield but are most abundant near its western margin where some are quarried and crushed for road metal.

Putting together the information available throughout the State, we conclude that the oldest rocks found in Western Australia belong to the older part of the Archaean Era. It is a great succession of rocks, generally much metamorphosed, which is called the Kalgoorlie-Yilgarn System in the southern part of the State and the Pilbara System in the North-West region. In the early part of Kalgoorlie-Yilgarn (Pilbaran) times there was much volcanic activity which took the form of eruptions of ultrabasic, basic and intermediate lavas, tuffs, and breccias. Many of the basic lavas, as judged from the pillow structures they contain, were submarine extrusions. These volcanic rocks were penetrated, shortly after their extrusion, by intrusions from the same magma; similar events must be occurring now in the interior of great volcanic masses like Etna or Hawaii. In later Kalgoorlie-Yilgarn times, the dominant process was sedimentation, so that the earlier volcanic rocks, with the minor associated bands of sediment, became overlain by a great thickness of sandy and clayey sediments. These sediments must have been derived from some land mass composed of rocks of pre-Kalgoorlie-Yilgarn age but this, possibly the oldest of all rock assemblages, has apparently not yet been found in Australia or any other part of the World.

After the accumulation of these older Archaean lavas and sediments came a period of intense earth-movement during which the rocks were, in most places, closely folded and regionally metamorphosed. The folding was accompanied by widespread granitic intrusions, some of which consolidated into primary gneisses whereas others soaked into the pre-existing rocks, penetrating them along bedding planes, joints, and other fractures, and so forming hybrid granitic gneisses by granitisation.

Where they were not affected by this First Granite Invasion, the volcanic rocks of the Kalgoorlie-Yilgarn and Pilbara Systems were regionally metamorphosed, in some places very strongly into dark-coloured schists, in others only very slightly. Similarly, the sedimentary rocks of the Kalgoorlie-Yilgarn and Pilbara Systems, where they have escaped the first granite invasion, *i.e.* have not been granitised, are in some places but slightly regionally metamorphosed, in others they are converted into various types of schist and quartzite.

All the Archaean rocks described above were invaded by the 'Younger' Granite, which, unlike the 'Older' Granite, formed well-defined intrusions many of which are stocks, though smaller offshoots from the same magma, in the form of 'porphyry dykes',

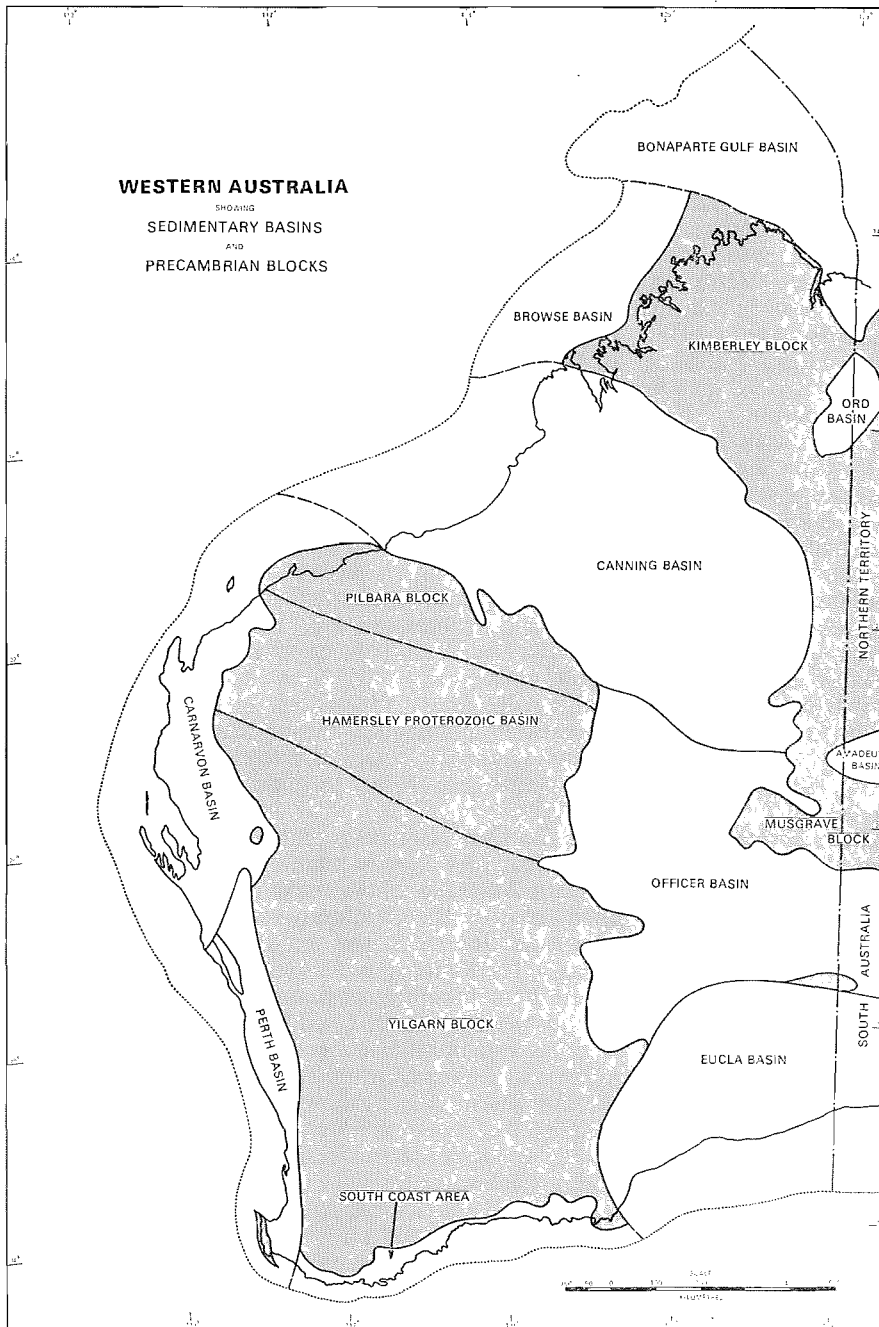
occur at nearly every mining centre. These events occurred after the folding but before Proterozoic times. Any of the Archaean rocks in Western Australia may contain ore-bodies yielding gold and other minerals of economic value. It seems likely that many of these ore-deposits were formed at the time of the Second Granite Invasion which, from radioactive age determination studies, occurred about 2,700 million years ago. Important iron-ore deposits occur in the Archaean rocks at many localities, for example at Mount Goldsworthy in the Pilbara, Talling Peak in the Yalgoo Goldfield, and Koolyanobbing, Bungalbin and many other localities in the North Yilgarn. These are all banded ironstone deposits which are interbedded with the basaltic lavas and sedimentary rocks of early Archaean age. In many places there are important manganese deposits associated with these banded iron formations. A rich nickel deposit discovered in ultrabasic Archaean rocks at Kambalda near Kalgoorlie in 1966, has now become an important source of nickel. Base metal ore deposits, such as nickel, cobalt and chromium, are generally associated with ultrabasic igneous rocks. Ultrabasic rocks are intrusive into or interbedded with the older Archaean volcanic and metasedimentary rocks of the Kalgoorlie-Yilgarn System in the country between Norseman and Laverton and, following the discovery of important nickel deposits at Kambalda and Scotia in the vicinity of Kalgoorlie and Mount Windarra near Laverton, these areas are being carefully examined to assess their prospects for nickel and other base metal deposits.

Finally, in Proterozoic times we had the deposition, under shallow-water conditions, of conglomerates, sandstones, shales and banded iron formations and another period of volcanic activity yielding basaltic lava flows. Other than in a few narrow belts these rocks have not suffered the intense earth movements which affected the older rocks, and so are practically un-metamorphosed. Important blue asbestos deposits in these rocks have been exploited at Wittenoom Gorge in the Hamersley Range of the West Pilbara. The asbestos deposits occur in banded ironstone formations which also contain large iron-ore deposits. The well-known iron-ore deposits of Cockatoo and Koolan Islands in Yampi Sound, which have been exploited since 1951, are metasedimentary deposits of Late Proterozoic age. Although the Proterozoic rocks cover extensive areas in the northern parts of the State they have largely been stripped off the southern half by erosion. The final episode in the Precambrian history of this State was the widespread intrusion of dolerite dykes approximately 550 million years ago. Small lead and copper deposits are closely associated with these dolerite intrusions in the Northampton Mining Field, where the discovery of a lead-copper deposit at Waneranooka led, in 1842, to the first metal mining operations in Australia.

The Sedimentary Basins

There are five major post-Proterozoic sedimentary basins in Western Australia and the adjoining continental shelf as shown in the accompanying map—the *Bonaparte Gulf Basin* in the north-east part of the Kimberley Division extending into the Northern Territory, the *Canning Basin* of the West Kimberley, the *Carnarvon Basin* of the North-West, the *Perth Basin* extending from lat. 29° S. to lat. 33° S. and the *Eucla Basin* occupied by the Nullarbor Plain. All of these basins have offshore extensions as shown in the map on page 19. Large areas of the Central Division are covered by sediments of the *Amadeus Basin* of Central Australia and the shallow *Officer Basin*. In addition to these major basins there are smaller basins such as that at Collie and scattered areas where sediments, which are dominantly lacustrine in nature, have been deposited. In these sedimentary areas we find sediments ranging from Lower Palaeozoic to Pleistocene in age. These sediments of Palaeozoic and later age are, as a rule, less disturbed than those of Precambrian times and many are abundantly fossiliferous. Therefore, there is a sure means of correlating formations even in widely separated places, and so our knowledge of the history of these sedimentary areas is more detailed than in the much altered, highly folded, unfossiliferous Precambrian rocks of the basement.

Apart from the superficial deposits the economic significance of these basins is confined to their possibilities for the occurrence of artesian water, coal, oil and natural gas. A prime requisite for the occurrence of artesian and sub-artesian water is the occurrence



POST-PROTEROZOIC SEDIMENTARY BASINS AND PRECAMBRIAN BLOCKS OF WESTERN AUSTRALIA
(PRECAMBRIAN AREAS STIPPLED)

of interbedded strata of varying porosity and permeability. These conditions are met in a number of the sedimentary basins in Western Australia and the development of the pastoral industry in the arid or semi-arid parts of these basins has been largely dependent on the occurrence of artesian water. In the metropolitan area, artesian bores are an important source of water supplies. Coal deposits are also confined to areas of sedimentary rocks and occur in the Permian rocks of two of the minor basins, namely the *Collie* and the *Irwin River Basins*, and in the Lower Jurassic sediments of the Perth Basin (at Eneabba, where a seam 100 feet thick has been found at a depth of 6,000 feet in a borehole sunk in search for oil, and is indicated in shallow shot-holes in the Hill River area). Up to 1966 the coal deposits of the lacustrine Permian beds of the Collie Basin constituted the only power source in Western Australia, since oil of commercial significance had only then been proved and the gently undulating topography combined with low rainfall make the hydro-electric resources insignificant. So far as oil is concerned the first occurrence of flow oil in Australia was encountered in Rough Range Bore No. 1, in the Carnarvon Basin, late in 1953. This discovery of flow oil resulted in an increase in the rate of geological exploration of all the major sedimentary basins. The results of extensive geological mapping, geophysical surveys and exploratory drilling for oil have to date been rather disappointing. However, a commercial field was proved at Barrow Island off the north-west coast in 1966. Other oil occurrences have been located at various localities in the Perth Basin, e.g. in the vicinity of Dongara and this indicates the presence of suitable source material and conditions for oil formation and preservation. Moreover, oil search drilling operations have located some widely-spaced important finds of natural gas at Dongara and Gingin in the Perth Basin, and North Rankin and Goodwyn in the offshore part of the southern Canning Basin. The Dongara gasfield is now being exploited for the metropolitan area of Perth and the industrial areas further south. The possibilities of locating other commercial oilfields and gasfields in the Carnarvon, Canning and Perth Basins are by no means exhausted and the search is being actively continued both on land and offshore in the continental shelf area.

A detailed description of the sedimentary formations of different ages, from the Cambrian to the Recent, in the various sedimentary basins has been set down in 'The Stratigraphy of Western Australia' (*Journal Geological Society of Australia*, volume 4, part 2, pp. 1-161, 1958). It is proposed here merely to indicate the main features of the various basins.

The *Bonaparte Gulf Basin*, in the East Kimberley, extends into the Northern Territory and offshore below the Timor Sea. As already mentioned, this and the nearby Ord Basin are the only basins in Western Australia where rocks of proved Cambrian age are exposed. On Western Australian territory the Cambrian rocks extend as a narrow belt along the interstate border between lat. 16° 15' S. and lat. 18° 30' S., reaching westward from the border for 15 to 75 miles. The Cambrian consists of basalts at the base of the sequence, overlain by Middle Cambrian fossiliferous limestones, shales and sandstones. There is a small development of sandstones which are considered to be of Lower Ordovician age, following which there is a big time gap and the next youngest formations are sandstones and limestones of Upper Devonian and Lower Carboniferous age. Upper Carboniferous and Lower Permian formations are absent, the next marine transgression being in the Middle Permian when a thick sequence of conglomerates, sandstones, and limestones was deposited. The only other sedimentary rocks in this basin are freshwater sediments (siltstones, marls and cherts containing freshwater fossils) of late Tertiary age.

The *Canning Basin* (formerly named the Desert Artesian Basin), in the West Kimberley, extends from the coast between Derby and the De Grey River in a south-easterly direction almost to the 128° meridian. The north-east or Fitzroy part of this basin consists of a comparatively narrow and shallow section (the Lennard Shelf) flanking the Precambrian land mass to the north, and a deep trough (the Fitzroy Trough) estimated, from aeromagnetic geophysical surveys, to contain a thickness of the order of 20,000 feet of sedimentary strata ranging in age from Ordovician to Triassic. It was in this area that bores seeking oil were first drilled in Western Australia, following the discovery in 1919 of traces of oil in a water bore on Gogo Station. The larger Canning Desert portion, the South Canning Basin, is covered by a relatively thin Mesozoic and Permian sequence,

but geophysical work followed by some deep drilling has indicated that there are deep depressions in this area, the deepest of which is the Kidson Sub-basin, which has a basement approximately 20,000 feet below the surface.

The oldest Palaeozoic sediments in the Fitzroy portion of the basin are richly fossiliferous limestones of Ordovician age outcropping near Price's Creek. These are overlain by Devonian reef limestones, sandstones and conglomerates, followed by Carboniferous sandy limestones. These in turn are followed by a thick Permian sequence of sandstones (of marine glacial origin deposited from floating ice), fossiliferous calcareous shales and limestones, and Upper Permian fossiliferous ferruginous siltstones and sandstones. All of these formations dip gently in a general south-westerly direction towards the centre of the basin but these regional dips are interrupted by local folding. Shale and sandstone beds of Triassic age occur in the Fitzroy Trough section of the basin. The youngest rocks in this area are igneous extrusive lava flows and intrusive sheets, dykes, and volcanic necks which have been found intruding all rocks of the sequence from the Precambrian granitic basement to the youngest sediments (Triassic) present. These igneous rocks, from direct geological evidence, are of post-Triassic age, and radioactive age determinations made in 1959 indicate that they were intruded 180 million years ago (*i.e.* in Jurassic times). This is one of the two areas in the whole of Western Australia where post-Cambrian igneous activity is known. It is interesting to note the occurrence of a small lead deposit in Devonian limestone at Narlarla in the Napier Range. This is the *only* primary metallic ore deposit of post-Proterozoic age known in Western Australia and it may be genetically related to the Jurassic igneous activity or may have been deposited from sea water by organisms during Devonian times.

In the Canning Desert section of the basin the Palaeozoic rocks are not well exposed and the greater part of this portion of the basin (where not obscured by superficial unconsolidated sands) is occupied by Mesozoic sediments ranging in age from Lower Jurassic to Lower Cretaceous. The deep depressions in the floor of the South Canning Basin are filled with Palaeozoic sediments as proved by the first deep oil test well (Kidson No. 1) which was abandoned at 14,539 feet in Lower Ordovician limestone. There is no evidence in the entire basin of any marine transgression after Lower Cretaceous times.

The basin extends some 200 miles offshore to the coral islands of the Rowley Shoals where some wells have been sunk in the search for oil. Drilling in search of oil and gas was commenced in 1967 with Ashmore Reef Well, but there were no discoveries in the first ten wells drilled until 1971, when Scott Reef No. 1, approximately 250 miles north-west of Derby proved to be a major gas/condensate discovery. Subsequently, up to the present, there have been a number of major gas/condensate/oil strikes, mainly in the south-western end of the offshore Canning Basin north of the producing oil field of Barrow Island. The existence of commercial natural gas fields has now been proved, and exploratory work is continuing, directed towards discovery of further gasfields and oilfields.

The *Carnarvon Basin* (formerly called the North-West Artesian Basin) has been the most intensively studied of the major sedimentary basins in Western Australia. It extends along the west coast from Onslow near the mouth of the Ashburton River as far south as the mouth of the Murchison River, the maximum width of the basin being 125 miles at the latitude of Carnarvon. In this basin the eastern portion up to fifty miles wide is occupied by a thick sequence of marine Palaeozoic sedimentary rocks ranging in age from Middle Devonian to Upper Middle Permian, all of which have a westerly regional dip. The estimated maximum thicknesses of the Palaeozoic strata are:

Permian	....	....	....	13,175 feet
Carboniferous	....	....	....	2,510 feet
Devonian	....	....	....	5,120 feet

This Palaeozoic sequence which consists of fossiliferous Devonian limestones and sandstones, Carboniferous limestones and Permian marine glacial beds, limestones, sandstones, and shales, is almost entirely marine in origin. In the Carnarvon Basin we have the only wholly marine Permian sequence in Australia, and without doubt *one of the thickest marine Permian sequences in the World.*

No rocks of Silurian age were known from the western half of the Australian continent until 1957 when a bore sunk by West Australian Petroleum Pty. Ltd. at Dirk Hartog Island in Shark Bay encountered limestones of Silurian age underlain by sandstones which are now correlated with the reddish sandstones which outcrop in the lower reaches of the Murchison River.

To the west the Permian rocks are unconformably overlain by Cretaceous sandstones, shales, marls and limestones attaining a total thickness of 2,000 feet. It is the basal formation, the *Birdrong Sandstone*, of the Cretaceous sequence that is the oil sand encountered in Rough Range Bore No. 1. Another Cretaceous formation, the Windalia Formation, is one of the important oil reservoirs of the Barrow Island Oilfield. The Cretaceous rocks outcrop in a north-south belt averaging fifty miles wide between the Palaeozoic and Precambrian rocks on the east and the Tertiary limestones to the west. The only other Mesozoic formation exposed at the surface in this basin is a Jurassic sandstone twenty-five feet thick. However, a deep well (Cape Range No. 2) drilled in search of oil at Exmouth Gulf, after passing through the base of the Cretaceous at 3,707 feet, entered the Lower Jurassic which extended to the depth of 15,169 feet at which the bore was discontinued, thus proving a thickness of at least 11,462 feet of Lower Jurassic strata in this area. It is apparent that there is a marked thickening of the Mesozoic formations from east to west in this area. The westernmost belt of the Carnarvon Basin is occupied by Tertiary strata, mainly limestones, which are well exposed in the Rough and Cape Ranges of the Exmouth Gulf area. These limestones, which range from Lower Miocene to Pliocene in age, total 1,200 feet in thickness and are discontinuously overlain by Pleistocene and Recent beds approximately 450 feet thick. Marine Tertiary sediments which are so well developed along the western margin of the basin extend as a thin discontinuous formation unconformably over the Permian beds of the eastern part of the basin, indicating that in Upper Eocene times the sea transgressed practically the whole of the Carnarvon Basin.

The sedimentary rocks of the Carnarvon Basin were affected by earth movements at various times. Even the youngest of the Tertiary rocks have been thrown into gentle folds which are significant so far as the search for oil is concerned because, in addition to having suitable conditions for the formation and preservation of oil, suitable structures are necessary for its concentration into local areas (oil 'pools'). So far as structure is concerned, the general picture of the Carnarvon Basin is the gentle westerly regional dip of the Palaeozoic sediments of the eastern half of the basin and the gentle dome and basin folding of the western half.

The *Perth Basin* (formerly called the Coastal Plain Artesian Basin) is a narrow elongated basin on the western border of Western Australia extending from Geraldton in the north to Cape Leeuwin in the south. At Geraldton it is thirty miles wide and is flanked both to the west and east by Precambrian crystalline rocks (mainly gneisses). The maximum width of the basin is approximately fifty miles at Watheroo and it narrows again to the south being approximately thirty miles wide in the sunland between Busselton and Augusta. At this southern end it is again flanked both to the east and west by Precambrian rocks. The surface of the basin is mostly covered by Recent sands but occasional outcrops of rocks as old as the Permian occur in places. The only evidence available regarding the structure, thickness and age of the sediments in the basin is that provided by geophysical surveys, some deep bores sunk in the search for oil and a number of water bores up to 2,400 feet deep in the metropolitan area. Gravity surveys indicate that there is a very considerable thickness of sediments, perhaps exceeding 30,000 feet, and it is probable that in this basin we have a complete succession from the Younger Proterozoic (*Cardup Group*), which outcrops along the Darling Scarp, to the Recent sands. Other than the Proterozoic of the Darling Scarp, the oldest sediments exposed are the gently folded Permian marine sediments of the *Eradu* and *Irwin River Basins* at the north end of the main basin. The Permian sediments of the Irwin River area have a total thickness of 4,000 feet and vary from marine glacial beds at the base (as in the Carnarvon and Canning Basins) through fossiliferous marine shales and limestones to lacustrine sandy sediments with coal seams in the upper part of the sequence. Marine and continental Jurassic

limestones and sandstones outcrop east of Geraldton and Jurassic beds, overlain by Cretaceous chalks and greensands, occur near Gingin and Dandaragan. In the southern part of the Perth Basin the oldest rocks exposed (if we except the Permian of the separate minor *Collie Basin* which is situated well to the east of the Darling Scarp in a glacially-gouged trough) are the Cretaceous *Donnybrook Sandstones*.

In the vicinity of Perth, artesian bores to a maximum depth of 2,400 feet expose a sequence varying from Jurassic sandstone at depth, through Cretaceous and Paleocene shales. The *King's Park Shale* of Paleocene (older Tertiary) age is overlain by Pleistocene aeolian sandstones of the *Coastal Limestone Formation*, the base of which is approximately 100 feet below sea-level. There is therefore a big gap in the succession here between the Paleocene and Pleistocene. Many boreholes have been sunk in the north-central part of the basin in the course of oil search operations. Boreholes near the coast (at Jurien Bay and Beagle Ridge) struck Precambrian crystalline basement rocks at comparatively shallow depths of 3,360 feet and 4,860 feet. The sediments thicken further inland, as evidenced by the increasing depth to the Precambrian basement in Cadda No. 1 (9,002 feet), Woolmulla No. 1 (9,218 feet) and Arrowsmith No. 1 (11,220 feet). Very thick sedimentary sequences have been disclosed by Eneabba Bore No. 1 (which bottomed in Lower Triassic at 13,712 feet) and Gingin No. 1 (in Lower Jurassic at 14,908 feet). Some deep wells have been drilled to the south of Perth, namely Pinjarra No. 1 which bottomed in Upper Triassic sandstone at 15,001 feet; in the far south (near the south coast), Sue No. 1 which encountered Precambrian granulites at 10,021 feet; near Perth, Cockburn No. 1 which was abandoned at 10,020 feet in Lower Jurassic sandstone; Whicher No. 1, near Busselton, which reached a depth of 15,266 feet in Permian sandstone before being abandoned; and Blackwood No. 1, abandoned at 10,939 feet in Permian sediments. The first offshore well in the Perth Basin (Quinns No. 1), spudded in on 10 October 1968 at a location approximately twenty miles north of Rottnest Island, was drilled to a depth of 7,248 feet without finding hydrocarbons. Some oil was found in a second offshore well (Gage Roads No. 1), drilled to a depth of 12,009 feet, approximately nine miles north-west of Rottnest Island.

Oil search operations in the Perth Basin have led to the discovery of significant oil and gas in the vicinity of Dongara near the northern end of the Basin and gas at Gingin, about fifty miles north of Perth. These discoveries, now proved as gasfields, are supplying natural gas to the metropolitan area and industrial areas south as far as Pinjarra. The other materials of economic significance in the Basin are coal, artesian water, limestone from the Pleistocene Coastal Limestone which is used as a source of lime and as building stone ('Cottesloe Stone'), and sand for building material. In addition, the Coastal Limestone contains picturesque caves of tourist attraction such as those of Yanchep, Yallingup and Margaret River.

The only evidence of igneous activity in the Basin is the Cretaceous basalt of the sunland between Bunbury and Cape Gosselin on the south coast.

Very little is known about the structure of this basin. It is bounded to the east by a large fault or monoclinal fold. The evidence available indicates that the main structural character of the deeper part is a regional dip to the east (of 15° to 20°) traversed by north-south trending faults with down-throws to the west. There is an unconformity (Upper Jurassic to Lower Cretaceous) at a depth of approximately 2,000 feet above which the Cretaceous and Tertiary sediments are almost horizontal.

The *Eucla Basin* occupying the Nullarbor Plain, in the south-eastern corner of the State is occupied at the surface by marine fossiliferous Middle Tertiary (Miocene) limestones with a marginal belt of Lower Tertiary (Eocene) limestones. The Tertiary rocks lie on sandstones and shales of probable Cretaceous age, which in turn overlie the Precambrian crystalline rocks. Little is known of the details of the stratigraphy and structure of the Eucla Basin since the beds are very flat-lying and have only been penetrated by water bores in a few places such as Madura near the coast and Loongana on the Trans-Australian Railway. The Madura bore is artesian but bores along the Trans-Australian Railway have only yielded sub-artesian water (*i.e.* the water will rise under pressure only part of

the way to the surface). The oil prospects of this basin are poor because of the comparatively small thickness (2,000 feet) of the sediments and the absence of suitable folded structures to form oil traps.

The Collie Coal Basin. Of the minor basins and isolated occurrences of post-Proterozoic sediments, Collie, since it is the only operating coalfield in Western Australia, is the only one which will be considered here. It is situated approximately 100 miles SSE. from Perth, and has an area of about 100 square miles. Actually it is made up of two basins separated by a sub-surface granitic ridge. It is composed of sandstones and shales with interbedded coal seams and is surrounded by Precambrian rocks. The coal measures, of Permian age, are of the order of 2,000 feet in thickness of which approximately 130 feet is coal. The actual contact between the Permian coal measures and the Precambrian granitic basement has nowhere been seen at the surface but has been encountered in deep drill holes in various parts of the Basin. Such drill holes reveal that Permian mudstone containing granite pebbles lies on an ice-planed surface of the Precambrian granitic rocks. This suggests that the Collie Basin, formerly considered to be a block of the Permian downfaulted into the Precambrian basement, is actually a glacially-gouged trough formed by terrestrial glaciation in the Permian and since filled with Permian lacustrine sediments. Coal occurs at three horizons and the seams, which average six feet in thickness, persist over fairly long distances. From the associated plant fossils these coal measures appear to be comparable in age with those of the upper part of the Permian sequence at the Irwin River near the northern end of the Perth Basin. There is another similar basin, containing Permian coal measures, the *Wilga Basin*, of about twenty square miles extent, approximately twenty miles south-south-east of Collie. There may be other small glacially-gouged Permian basins in the southern part of the State, which are yet unknown.

The Superficial Deposits

Over a great part of the State fresh rock outcrops are comparatively sparse. Most of the country is covered by highly-weathered rocks, laterite, drift sand, soils, and, in the salt lake country, by thin evaporite deposits.

Laterite. In the southern half of the State the remnants of the Darling Plateau are covered by a thin layer up to ten or fifteen feet thick of a reddish-brown rock composed of spherical pebbles tightly or loosely cemented together by a lighter-coloured earthy matrix. This material in its poorly consolidated state is popularly referred to as 'iron-stone gravel' and when strongly cemented as 'ironstone'. This rock, called laterite, although it covers large areas, is purely superficial and wells or bores sunk in it pass within a few feet into highly weathered country rock which may extend down for distances up to 100 feet before encountering fresh unweathered rock. This laterite crust and the underlying highly weathered country rock were developed on a gently undulating surface during a period of warmer, more humid, climatic conditions. These tropical conditions probably existed in Late Tertiary (Pliocene) times when a great part of Western Australia had been reduced by long-continued erosion to a peneplain lying close to sea-level, or soon after, when this peneplain had been uplifted to form the *Darling Plateau*. This uplift, judged by the elevation of the laterite-capped hills and the occurrence of fossiliferous marine Eocene sediments 900 feet above sea-level at Norseman, was of the order of 1,000 feet. On the Great Plateau, remnants of this Darling Plateau are evidenced by the table-topped hills so characteristic of much of the Plateau country. The significance of the laterite profile and the soils developed from the laterite and associated weathered rocks has already been mentioned. Economically, the laterite is important for road-making materials and in a few places (such as Wundowie) as an iron ore. The main constituents of the laterite are the insoluble products of intense rock weathering—iron oxide, alumina and silica. In many places the alumina content is sufficiently high to call them bauxites. Bauxites are the main source of aluminium, and the bauxitic laterites of the Jarrahdale area in the Darling Range near Perth are being exploited as aluminium ore.

The mid-Tertiary land surface of the southern half of Western Australia on which the laterite profile was developed at a time when this country was subjected to a tropical climate extends into the northern part of the State. In the Hamersley Iron Province of the North-West Division this old land surface truncated the Lower Proterozoic banded iron formations of the Hamersley Group. At and below this old land surface, (the *Hamersley Surface*) which can be traced without tectonic break from sea-level to elevations of 4,000 feet, there was a secondary concentration of the iron of the Lower Proterozoic rocks resulting in extensive rich iron-ore deposits which make this area one of the richest iron provinces in the World.

In the far south-west of the State sub-surface hard pan formations consisting of ferruginous sandstone are a potential source of low-grade iron ore.

Soils and drift sands. Western Australia, an area of 975,920 square miles extending from lat. 13° 44' S. to lat. 35° 08' S., although having little variety in its broad physical features, has very considerable variation in climates from the tropical areas of summer rainfall in the north through a central and inland province of low rainfall to the temperate areas of winter rainfall in the south. Moreover, throughout this enormous area there is very considerable variation in the nature of the country rocks. The nature of the soils developed is dependent on these two factors—climate and parent rock—so it will be apparent that there will be very considerable variation in the soils over this extensive area. L. J. H. Teakle has recognised the following major soil zones of Western Australia:

1. Grey, yellow and red podsolised, or leached, soils of the temperate sclerophyll forests.
2. Red-brown earths of the eucalyptus-acacia woodlands.
3. Grey and brown calcareous, solonised soils of the low rainfall eucalyptus woodlands—('mallee' soil zone of Prescott).
4. Red and brown acidic soils of the acacia semi-desert scrub—mulga, etc.
5. Brown acidic soils of the spinifex semi-desert steppes of the North-West.
6. Pinkish-brown calcareous soils of the Nullarbor Plain desert shrub steppes.
7. Pinkish-brown calcareous soils of the acacia semi-desert scrub, mallee and salt bush-blue bush zone.
8. Brown soils of the tropical woodlands, savannahs and grasslands.
9. Red sands of the central desert sandhills—spinifex with desert acacias, desert gums and mallees (*Eucalyptus spp.*).

Each of these major soil zones may be subdivided into one or more soil regions and the reader is referred to a paper 'A Regional Classification of the Soils of Western Australia, by L. J. H. Teakle (*Jour. Roy. Soc. West. Aust. XXIV*, pp. 123-95) for details concerning the soil characteristics of these various zones and regions.

There are considerable areas of Western Australia covered by drift sand which may be in the form of parallel red sand dunes or, in the southern part of the State, extensive sandy plains. The latter have been generally considered to be residual from the weathering of granite. These sand plains are often underlain by lateritic material and they probably represent the leached zone of the laterite profile. The youngest of the drift sand deposits are the coastal sand dunes.

Coastal sand deposits are of considerable economic importance. At various places along the south and west coasts there are beach sand deposits in which there is a natural concentration of heavy minerals such as zircon, monazite, xenotime, rutile and ilmenite. Such deposits are at present being exploited at Capel and Bunbury for their ilmenite content, which is valuable because of its low chrome content. The other heavy minerals such as zircon, monazite and xenotime are also being exported overseas. Similar deposits have been discovered at Eneabba (approximately twenty miles inland at 150 miles north of Perth)—deposits which have been evaluated and are just now (1974) being exploited.

Salt lake deposits. These, together with the coastal sand deposits, represent the youngest of the geological formations developed—indeed they are in course of formation at the present time. They are evaporite deposits resulting from the evaporation of lake waters in the areas of internal drainage. Soluble salts produced by rock weathering are leached out by rain and running water and transported by streams to these lakes. During the long dry summers most of these lakes dry up and the soluble salts are deposited, yielding accumulations of gypsum and common salt. In a few of these inland lakes hydrated potassium aluminium sulphate (alunite), which is a valuable source of potash for fertilisers, has been formed but its actual mode of formation has not yet been satisfactorily explained.

Valuable potash reserves occur at Lake MacLeod, north of Carnarvon. This 800-square mile coastal lake contains brines rich in potash salts which are the last salts to crystallise on the evaporation of sea water, saturating the mud of the lake floor. It is expected that these deposits, which will be Australia's only domestic source of potash, will soon come into production, as a plant with initial capacity of 18,000 tons per annum is at present under construction with provision to expand to more than Australia's present consumption of 200,000 tons per annum.

Solar salt (sodium chloride) is at present being produced at several localities in the North-West, such as Port Hedland, Exmouth Gulf and Shark Bay, where a combination of low-lying flat topography and shallow marine embayments (such as Useless Loop in Shark Bay) with hot dry climate resulting in high evaporation are the ideal conditions for crystallisation of sea water salts. The production of such solar salt is expected to amount to 2 million tons annually. In localities such as Shark Bay, where the waters are abnormally saline, other rocks—limestones—are in course of formation. The Shark Bay area has proved a very fruitful area for research on the formation of various limestones and the information being derived from the study of these presently forming rocks has helped in the interpretation of the significance of such deposits which formed in past geological times.

Conclusion

From the foregoing summary of the geology of Western Australia we see that, although nowhere do we find the complete geological succession, somewhere in the State there are deposits representative of every Period. The geological history of Western Australia begins with the basaltic igneous activity of the Early Archaean some 3,000 million years ago, followed by sedimentation, intense mountain building activity and associated granitisation and granite intrusions. In post-Archaean times there is a record of sedimentation throughout all the main geological periods. Igneous activity ceased in the Lower Palaeozoic and only re-occurred during the late Mesozoic, yielding the basaltic lavas of the far South-West and the volcanic rocks of the West Kimberley. By mid-Tertiary times much of Western Australia had been reduced by denudation to a gently undulating peneplain land surface on which, under tropical climatic conditions, there was an extensive development of laterite which in places constitutes valuable bauxite and iron-ore deposits. Geological processes are continuing and at the present day rocks and soils are still in the process of formation.

The Mineral Deposits

In the foregoing pages mention has been made in various places of the mineral deposits on which the development of Western Australia has been so dependent. These deposits are directly related to the geology—the nature of the rocks and their structural relationships—of the areas in which they occur. One would not, for example, look for coal, oil or natural gas in the crystalline Precambrian Shield, nor for gold or nickel deposits in the sedimentary basins that have been described. Moreover, in spite of the fact that the nickel deposits occur in Older Precambrian rocks, not all of these rocks are potential hosts for nickel deposits—they are only likely to occur in the ultrabasic rocks which constitute a very small fraction of 1 per cent of the Older Precambrian rocks.

The tabulated statement below summarises the sequence of events represented in the geological history of Western Australia and the mineral deposits associated with each. This table, read in conjunction with a geological map of any area, will indicate the economically important deposits which could possibly occur in that particular geological environment.

GEOLOGICAL EVENTS AND MINERAL DEPOSITS IN WESTERN AUSTRALIA

Era	Main geological events	Economic mineral deposits
KAINOZOIC	15. Weathering and erosion (Present day)	Beach sand deposits, salt, gypsum, sands and clays, peat, alluvial deposits (gold, tin, etc.)
	14. Sedimentation (Pleistocene and Recent)	Ilmenite and other black sand minerals, limestone
	13. Peneplanation (mid-Tertiary) and laterite formation	Bauxite Iron and manganese ores Alluvial tin and gold Clays
	12. Sedimentation (older-Tertiary)	Artesian water
MESOZOIC	11. Sedimentation (with basalt outflows in Cretaceous)	Artesian water Oil and gas Coal Basalt for aggregate stone
PALAEOZOIC	10. Sedimentation, earth movements, periods of erosion	Coal Oil and gas
PROTEROZOIC	9. Basic igneous intrusions	Road metal (blue metal) Lead, zinc and copper
	8. Sedimentation and minor granitic magma intrusions	
	7. Chemical sediments (banded iron formations)	Iron ore and blue asbestos (in Hamersley basin)
ARCHAEOZOIC	6. Pegmatite and quartz vein formation from end-stages of granitic intrusions	Tin, tantalum, tungsten, beryllium, lithium minerals Gold and silver in early Archaean country rocks (1 and 2)
	5. Intrusion of granitic magma (2,700 million years ago)	Aggregate and building stone
	4. Granitisation—conversion of all pre-existing rocks into granitic rocks Contemporaneous with intense folding, fracturing and metamorphism of pre-existing rocks	Aggregate and building stone
	3. Intrusion of basic magma forming stratiform layered basic/ultrabasic igneous complexes	Nickel, copper and chromium in ultrabasic rocks
	2. Sedimentation with minor periods of volcanic activity	
	1. Eruption of submarine basaltic lavas and chemical deposition of banded ferruginous cherts	Iron ore

Current Geological Investigations in Western Australia

While much is known about the geology and mineral resources of Western Australia, there is still much to be learned. The foregoing summary account of the geology of Western Australia is based on work carried out in the past, which has increased in tempo during the last decade because of the discovery of important oil, gas and metal-bearing mineral deposits.

At present, geological work in Western Australia is being carried out by the following bodies.

1. The Geological Survey Branch of the Department of Mines of Western Australia, which is engaged in regional geological mapping, special investigations of varied character concerned with groundwater resources, mineral deposits,

and engineering geology problems, and problems arising daily, which require geological advice to the public. The major results of the Geological Survey's operations are published annually in the Annual Report of the Department of Mines of Western Australia, in Bulletins issued at irregular intervals and in four-mile scale geological maps with explanatory notes, which are also issued at irregular intervals.

2. The Geology Department of the University of Western Australia. Research projects are undertaken by members of staff and research students, varying from mapping and petrological-mineralogical projects concerned with the Precambrian rocks which make up the greater part of the State and their associated ore deposits, through petrological and palaeontological work on rocks from the various sedimentary basins, to studies of present-day marine sedimentation. The results of such investigations are published in various scientific periodicals, both in Australia and overseas.
3. Oil exploration companies. Such companies have carried out geological and geophysical surveys of the various sedimentary basins and some offshore areas, and are presently engaged in deep-drilling programmes. Attention is now being given to drilling in the offshore continental shelf areas of the Canning and Perth Basins.
4. Mineral exploration companies. Following the discovery of important nickel deposits at Kambalda and Scotia near Kalgoorlie, and, subsequently, at Mount Windarra near Laverton, and other localities, many Australian and overseas exploration companies are engaged in base metal exploration, particularly in the Norseman to Laverton belt of Precambrian greenstones.

The continued efforts of these institutions and exploration companies are daily adding much to our knowledge of the geology of the western third of the Australian continent.

Seismicity of Western Australia

It had been generally considered that Western Australia was a stable block free of seismic activity in the form of earthquakes but this idea was shattered by the occurrence, on 14 October 1968, of a major earthquake centred near Meckering, eighty-four miles inland from Perth. This earthquake completely wrecked the town and most farm houses in the vicinity; alarmed numerous residents of Perth; caused minor damage to many buildings in the Perth Metropolitan Area; was felt within a radius of about 400 miles; and made people realise that Western Australia was not as stable as was previously thought. Other earthquakes, such as the Meeberrie earthquake of 29 April 1941 (the most severe earthquake yet recorded on the Australian continent), have tended to pass without much notice since they either occurred in less densely populated areas or were of low intensity. Records show (according to Everingham in a report of the Bureau of Mineral Resources, Geology and Geophysics, *Seismicity of Western Australia*) that there were forty-seven Western Australian earthquakes of local magnitude greater than 3.5 (Richter scale) recorded in the period August 1959 to June 1965, and 210 less intense earthquakes during the same period.

Most of the recorded minor earthquakes have originated in the Yandanooka-Cape Riche belt of country about 300 miles long by thirty miles wide, which lies just within the western margin of the crystalline Precambrian Shield. Indeed, all except five of the 210 recorded minor earthquakes of the period 1959 to 1965 originated in this narrow belt which is parallel to the regional geological structure of the older Precambrian rocks of the southern half of Western Australia. It was in this belt, at Meckering, that the severe earthquake of 14 October 1968 had its origin.

The major fault structure of Western Australia is the Darling Fault which forms the western margin of the Precambrian Shield and the eastern margin of the Perth Basin. It extends meridionally from the south coast for some 600 miles. It is considered that the total west block downward movement on this fault has been of the order of 30,000 to 40,000 feet. In spite of the fact that there is a major negative gravity anomaly over the

Perth Basin causing this region to be isostatically unbalanced, no earthquakes have been recorded which originated on this fault—indeed there is no geological evidence of any movement on the Darling Fault for at least 1 million years. The October 1968 movement on the Meckering Fault indicates that the Precambrian Shield is in a state of compression and would support a hypothesis that the Darling Fault, instead of being a westerly-dipping structure with downthrow to the west as commonly thought, is more probably an easterly-dipping compression structure with the east (continental) block thrust up over the Perth Basin. This would explain the observed stability of the Perth Basin which should, according to the gravity measurements, be a very unstable area. Instead of rising, as it should because of the major negative gravity anomaly, it is being held down by the overthrust continental block.

As has been indicated, the Meckering earthquake has drawn attention to the possibility of earthquake occurrence in south Western Australia and for the necessity to consider this factor when designing large structures. Calculations have been made from records during the period 1960 to 1969 to give an approximate idea of the order of earthquake frequency in the south-west corner of the State. These have indicated that an earthquake of magnitude greater than 6.5 would occur once every fifty years, and one of magnitude greater than 5.5 every ten years, but these figures are thought to be pessimistic because records kept since 1840 suggest a lower average frequency and the data used for these calculations are swamped by the foreshocks and aftershocks of the Meckering earthquake.

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Chapter II—continued

Part 2—Climate and Meteorology⁽¹⁾

(Contributed by the Western Australian Regional Office of the Bureau of Meteorology)

Western Australia is the largest State in the Commonwealth, extending from latitude 13° 44' S. to 35° 08' S., and from longitude 113° 09' E. to 129° E. It stretches a distance of about 2,400 kilometres in a north-south direction and about 1,600 kilometres west-east. A little more than one-third of the State lies within the tropics, while the remainder extends southward to the temperate zone.

Because of its large size and its latitudinal position, Western Australia has entirely different climates in its northern and southern parts, while in the central regions there is a gradual change from the tropical climate of the north to the typical Mediterranean climate of the south.

Most of the State is a plateau between 300 and 600 metres above mean sea-level and there are no outstanding mountain ranges. Where the edge of the plateau forms the Darling Range along the southern part of the west coast, it exerts a marked influence on the rainfall, causing a rapid increase from the coastal plain to the higher land. Elsewhere the effect of topography is less marked and its main influence is seen in the general decrease of rainfall with increasing distance from the coast.

PRESSURE SYSTEMS

Weather during the year is controlled largely by the movement of the anticyclonic belt (high pressure systems with anti-clockwise winds), which lies in an east-west direction across the continent for about six months of the year.

In winter this system moves northward, bringing clear skies with fine sunny days and easterly winds to the tropics. With this northward movement, westerly winds on the southern side of the anticyclones extend over the southern part of the State, bringing with them cool cloudy weather and rain. In mid-winter the northern fringe of the 'Roaring Forties' extends to Western Australia and there are frequent westerly gales in the south coastal belt.

These westerly winds are maintained by a series of depressions (low pressure systems with clockwise winds), which move eastward well south of the Western Australian coast, and others which originate in the Indian Ocean and move south-eastward past Cape Leeuwin. The extent to which westerlies affect the State depends largely on the intensity and the position of these depressions.

Towards the end of winter the anticyclonic belt moves southward, and the westerlies are confined more to the lower south-west and the south coastal districts. By summer the anticyclonic belt has moved so far south that its axis is off the south coast and easterly winds prevail over most of the State.

During this summer period the midday sun is at a high elevation in the tropics and the continual heating leads to the development of a monsoonal depression over this region. Wind circulation round this system causes easterlies on its southern or inland side, but in the coastal districts north-east from Onslow, and in parts of the Kimberley, westerlies prevail. Winds in both the north and the south of the State are then in the opposite direction to those prevailing during the winter.

As the sun moves northward again the anticyclonic belt follows it. The monsoonal depression over the tropics dissipates and westerlies again gradually extend northward to the southern part of the State.

(1) See *Appendix* for reference to additional information in earlier issues of the Year Book.

During the northern 'Wet' season (from about December to March), occasional cyclones, known locally as 'willy willys', bring strong winds and rain to the tropics. They originate generally in the Timor Sea or off the north-west coast and often move first in a south-westerly direction parallel to the coast and later in a south-easterly direction.

They frequently move inland between Broome and Onslow but occasionally travel further westward before curving to the south-east and moving inland over the west coast. Others fade out at sea without ever crossing the coast. Those that move inland usually commence to dissipate soon after crossing the coast, but occasionally they move right across the State, passing into the Southern Ocean and moving off towards Tasmania.

These storms are often extremely violent and have on occasions almost completely wrecked towns on the north-west coast, while a cyclone which struck a pearling fleet off the Eighty Mile Beach in 1887 caused the loss of twenty-two vessels and 140 lives.

However, despite the damage which they cause, the storms are of great benefit to the pastoral regions on account of the heavy and widespread rain which generally accompanies them. The heaviest fall ever recorded in one day in Western Australia, 747 millimetres, was received at Whim Creek from a cyclone in 1898.

RAINFALL

The moist rain-bearing winds in this State are in general from a westerly direction. The easterlies, having come from the dry inland parts of Australia, usually bring fine weather and clear skies.

Because of this the highest rainfall occurs in the winter months in the south of the State, and in the summer months in the north. In between these areas there is a gradual change from one rainfall regime to the other.

From the map on page 35, which shows the wettest six-monthly period of the year, it can be seen that the summer rainfall area extends southward from the Kimberley to the Trans-Australian Railway, where there is a rapid change to the winter rainfall regime of the south coast. However, the difference between summer and winter totals decreases southward, and the southern part of this region is one of almost uniform average rainfall.

Proceeding northward from the winter rainfall area of the south-west of the State, the wet period occurs earlier during the year. Across a belt Carnarvon-Menzies-Eucla, there is a more rapid change, and this belt divides the winter rainfall area from that which receives most of its rain in the first six months of the year. Further north, the change is more gradual but continuous and in the Kimberley most of the year's rainfall is received in the summer months which, in the southern parts of the State, are the driest of the year.

The mean annual rainfall for Western Australia is shown on the map on page 36.

The following table shows the average rainfall and number of wet days, the highest and lowest monthly totals, and the highest daily fall for various centres.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS
(Stations are arranged from north to south in three groups: Coastal, Wheat Belt and Other Inland)

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL													
<i>Wyndham</i> †—													
Rainfall—Average (mm)	196	166	119	26	8	5	4	0.6	2	11	46	110	694
Highest (mm)	717	523	447	515	88	120	133	21	35	85	142	292	1,431
Lowest (mm)	13	14	0	0	0	0	0	0	0	0	0.8	7	365
Highest one day (mm)	308	150	318	440	63	113	86	11	35	57	85	97	440
Wet days—Average number	13	12	9	3	1	1	1	0	0	2	6	10	58
<i>Broome</i> †—													
Rainfall—Average (mm)	159	144	101	30	21	23	4	3	1	0.8	13	77	577
Highest (mm)	827	599	599	259	178	247	59	95	22	10	278	368	1,094
Lowest (mm)	3	2	0	0	0	0	0	0	0	0	0	0	142
Highest one day (mm)	356	303	270	181	88	73	24	37	21	7	140	172	356
Wet days—Average number	10	10	7	3	2	2	2	0	1	1	1	5	44

† Post Office.

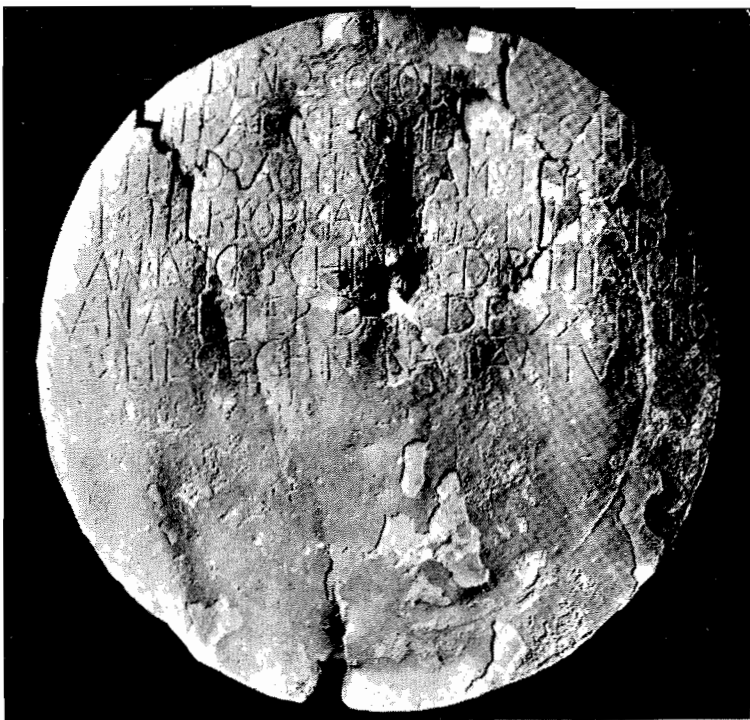
RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
<i>COASTAL—continued</i>													
<i>Onslow†—</i>													
Rainfall—Average (mm)	25	46	52	21	46	43	18	9	1	0.6	2	3	267
Highest (mm)	261	539	415	279	259	183	221	107	25	15	56	61	998
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	14
Highest one day (mm)	158	356	283	157	117	111	76	62	17	11	30	38	356
Wet days—Average number	2	4	3	2	4	4	4	2	1	0	1	1	28
<i>Carnarvon†—</i>													
Rainfall—Average (mm)	10	19	17	15	38	60	39	18	6	4	1	4	231
Highest (mm)	156	183	132	164	203	220	151	90	24	50	19	123	619
Lowest (mm)	0	0	0	0	0	1	2	0	0	0	0	0	68
Highest one day (mm)	91	112	119	50	72	103	60	49	16	26	8	119	119
Wet days—Average number	2	3	2	3	6	7	7	5	2	3	1	1	42
<i>Geraldton†—</i>													
Rainfall—Average (mm)	6	8	13	24	70	120	94	66	31	18	7	4	461
Highest (mm)	96	117	169	116	328	328	205	242	105	85	40	32	855
Lowest (mm)	0	0	0	0	4	34	18	8	0	1	0	0	240
Highest one day (mm)	79	82	94	69	78	87	51	93	43	49	36	21	87
Wet days—Average number	2	3	3	6	10	14	16	12	9	7	4	2	88
<i>Perth—Bureau—</i>													
Rainfall—Average (mm)	8	11	21	46	125	186	173	139	81	55	21	14	880
Highest (mm)	55	166	145	149	308	476	425	318	199	200	71	81	1,338
Lowest (mm)	0	0	0	0	14	55	61	12	9	1	0	0	508
Highest one day (mm)	44	87	77	67	76	99	76	74	47	50	39	47	99
Wet days—Average number	3	3	4	8	14	17	18	18	14	12	6	4	121
<i>Port Hedland†—</i>													
Rainfall—Average (mm)	53	64	85	27	26	29	11	9	1	2	3	17	327
Highest (mm)	500	364	436	278	222	177	98	148	25	33	85	260	1,020
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	32
Highest one day (mm)	152	130	283	110	162	142	47	92	22	32	77	229	283
Wet days—Average number	4	6	4	2	3	2	2	1	1	1	0	1	27
<i>Roebourne†—</i>													
Rainfall—Average (mm)	64	64	65	33	30	30	13	5	1	0.8	2	9	317
Highest (mm)	368	325	408	552	225	309	135	98	40	30	30	129	1,060
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	3
Highest one day (mm)	231	169	262	291	168	117	135	44	23	29	17	97	291
Wet days—Average number	3	4	4	2	2	2	1	1	0	0	0	2	21
<i>Bunbury†—</i>													
Rainfall—Average (mm)	10	11	24	46	129	186	173	127	81	55	25	14	881
Highest (mm)	86	103	91	175	266	411	417	301	201	195	84	80	1,365
Lowest (mm)	0	0	0	0	10	73	49	21	0	7	0	0	484
Highest one day (mm)	56	86	66	61	81	120	94	67	58	39	52	26	120
Wet days—Average number	3	3	4	7	14	18	18	17	14	11	6	4	119
<i>Albany†—</i>													
Rainfall—Average (mm)	23	23	40	73	122	137	146	129	104	81	40	31	949
Highest (mm)	217	161	166	234	290	293	269	285	202	187	170	117	1,393
Lowest (mm)	1	0	3	5	44	40	52	50	20	14	5	2	637
Highest one day (mm)	88	57	90	74	104	72	57	52	63	47	78	60	104
Wet days—Average number	7	7	10	13	18	20	20	20	18	16	11	9	169
<i>Esperance†—</i>													
Rainfall—Average (mm)	18	20	28	45	82	101	108	97	71	55	28	23	676
Highest (mm)	133	120	125	176	179	273	240	185	175	146	145	81	1,002
Lowest (mm)	0	0	0	2	20	28	24	19	11	13	0	0	438
Highest one day (mm)	70	39	44	126	52	106	55	59	116	45	51	71	126
Wet days—Average number	5	5	7	9	14	16	17	16	14	12	7	6	128
<i>Eucla—</i>													
Rainfall—Average (mm)	15	19	20	26	30	30	23	24	19	19	16	14	255
Highest (mm)	95	182	127	205	89	154	62	82	85	74	114	116	433
Lowest (mm)	0	0	0	0	0	2	3	2	0.6	0.6	0	0	112
Highest one day (mm)	54	115	51	41	33	36	26	31	40	33	28	49	115
Wet days—Average number	3	4	5	8	9	10	10	9	8	7	6	4	83

† Post Office.

DIRK HARTOGS' PLATE

Illustrated at right is the inscribed pewter plate left by the Dutch navigator, Dirk Hartogs, as witness of his visit in 1616 to the island which bears his name on the western side of Shark Bay. The plate was hammered out flat to take the inscription and it remained in position until 1697 when it was taken to Batavia by de Vlaming. Its whereabouts were unknown for some years but in 1902 it was discovered in the State Museum at Amsterdam.



VLAMING'S PLATE

Willem de Vlaming, a countryman of Dirk Hartogs, visited the island on 4 February 1697. He removed the original plate and substituted another on which the old inscription was copied and details of his own visit added. The illustration at right representing Vlaming's plate is a reproduction from the drawing in Freycinet's *Voyage autour du Monde*: the plate itself could not be traced for many years — see letterpress on page 2.



PLATE I—HISTORIC RECORDS OF DUTCH VOYAGES



Photograph by courtesy of the Fremantle Port Authority

PLATE 2—CAPE INSCRIPTION, DIRK HARTOG ISLAND, SHARK BAY

The enclosed area is the site of the post erected by Dirk Hartogs on the north end of the island as a record of his visit in the 'Eendracht' from 25-27 October 1616. The inscribed pewter plate which was nailed to the post was removed by Willem de Vlaming in 1697 and replaced by another. This duplicate plate was seen in July 1801 by Captain Hamelin, of the French corvette 'Naturaliste', who copied the inscription and nailed the plate to a new and stronger post. In 1818 the plate was removed by Captain Freycinet who deposited it in the Museum of the French Institute at Paris. Vlaming's plate is now held by the Fremantle Branch of The Western Australian Museum.

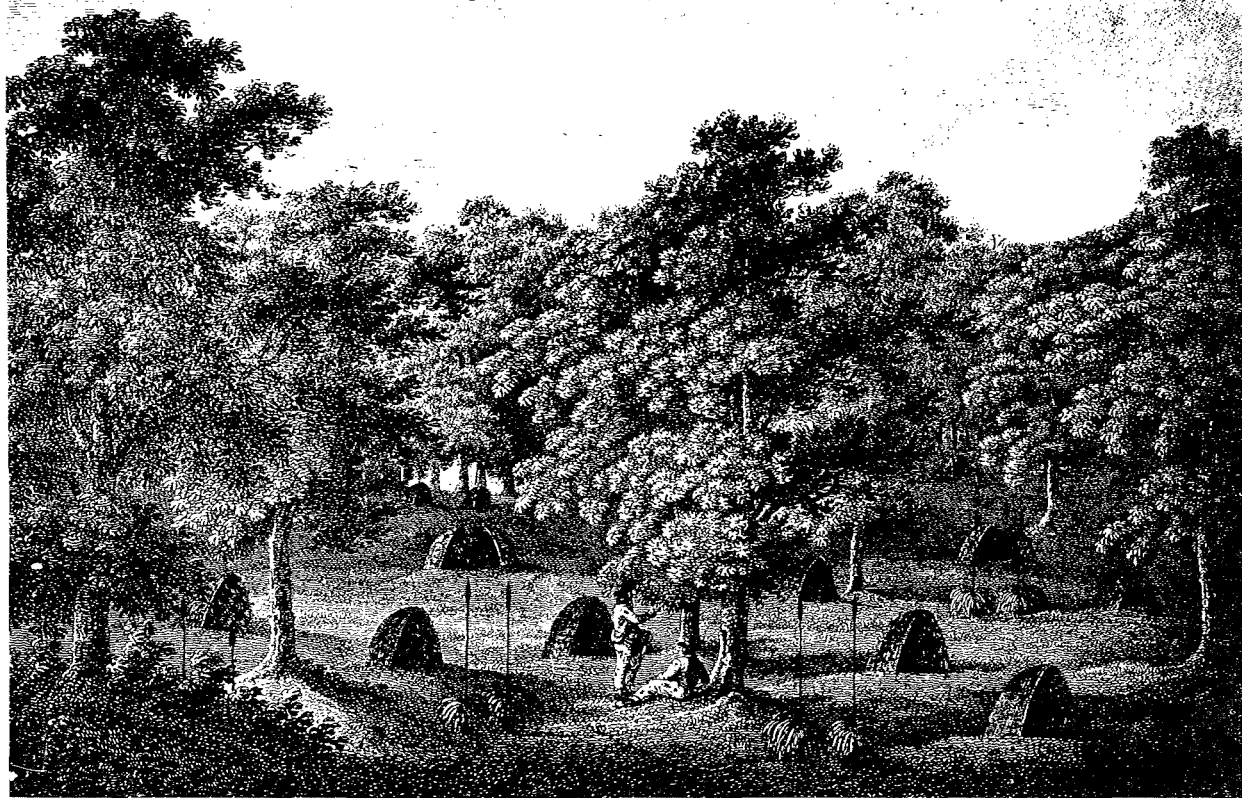


PLATE 3—DESERTED NATIVE VILLAGE, KING GEORGE SOUND AREA, AS SEEN BY VANCOUVER IN OCTOBER 1791

PLATE 4—VIEW FROM THE SOUTH SIDE OF KING GEORGE SOUND, AS SEEN BY FLINDERS IN DECEMBER 1801

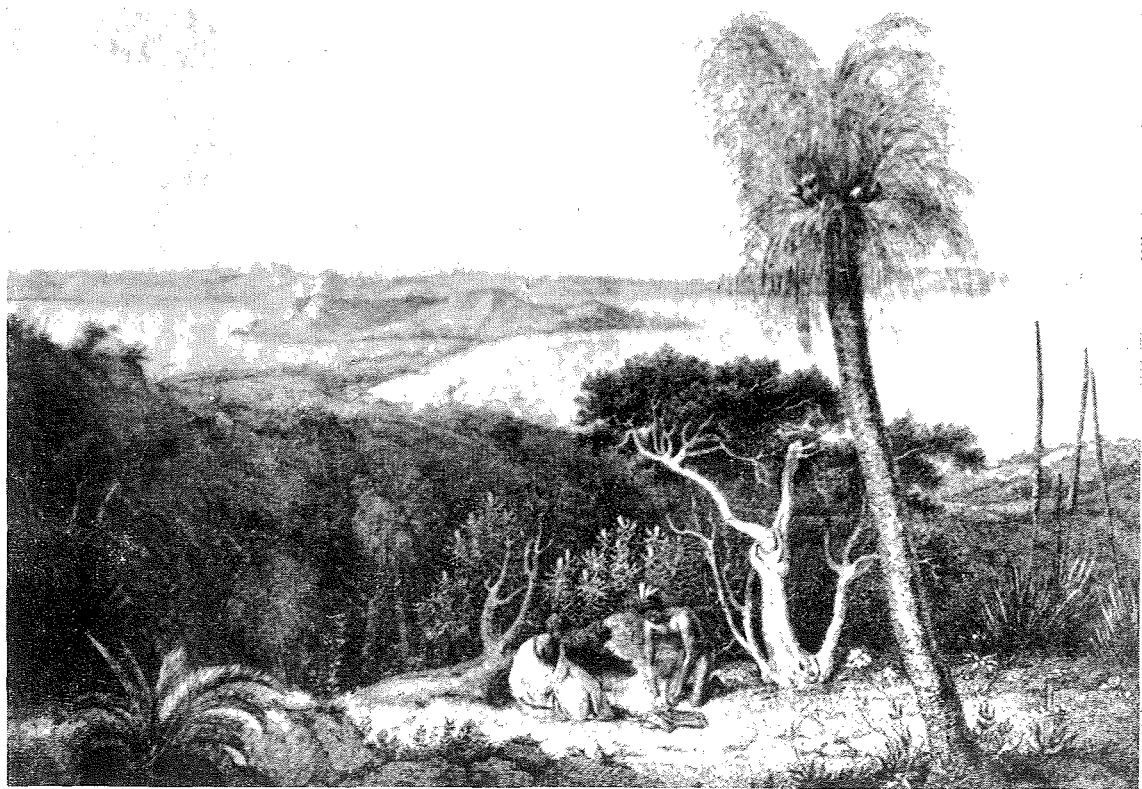




PLATE 5—H.M.S. 'SUCCESS'

On 17 January 1827 the frigate 'Success', under the command of Captain James Stirling, R.N., sailed from Sydney bound for the west coast of the continent. Stirling, on this voyage, explored the Swan River in some detail and carried out surveys of Gage Roads and Cockburn Sound. It was largely on the basis of his report that settlement of Perth resulted in 1829.

The keel of H.M.S. 'Success' was laid down in the Pembroke Dockyards in July 1823 and launching took place on 30 August 1825. Mounted with twenty-eight guns, she was posted in 1826 to the East Indies Station which included Australia. After running aground on a sandbank at Fremantle in 1829, the 'Success' had to lay up for extensive repairs and was ordered home in 1831 to be broken up. However, she did duty as a harbour ship at Portsmouth from 1833 until she was broken up in 1849.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

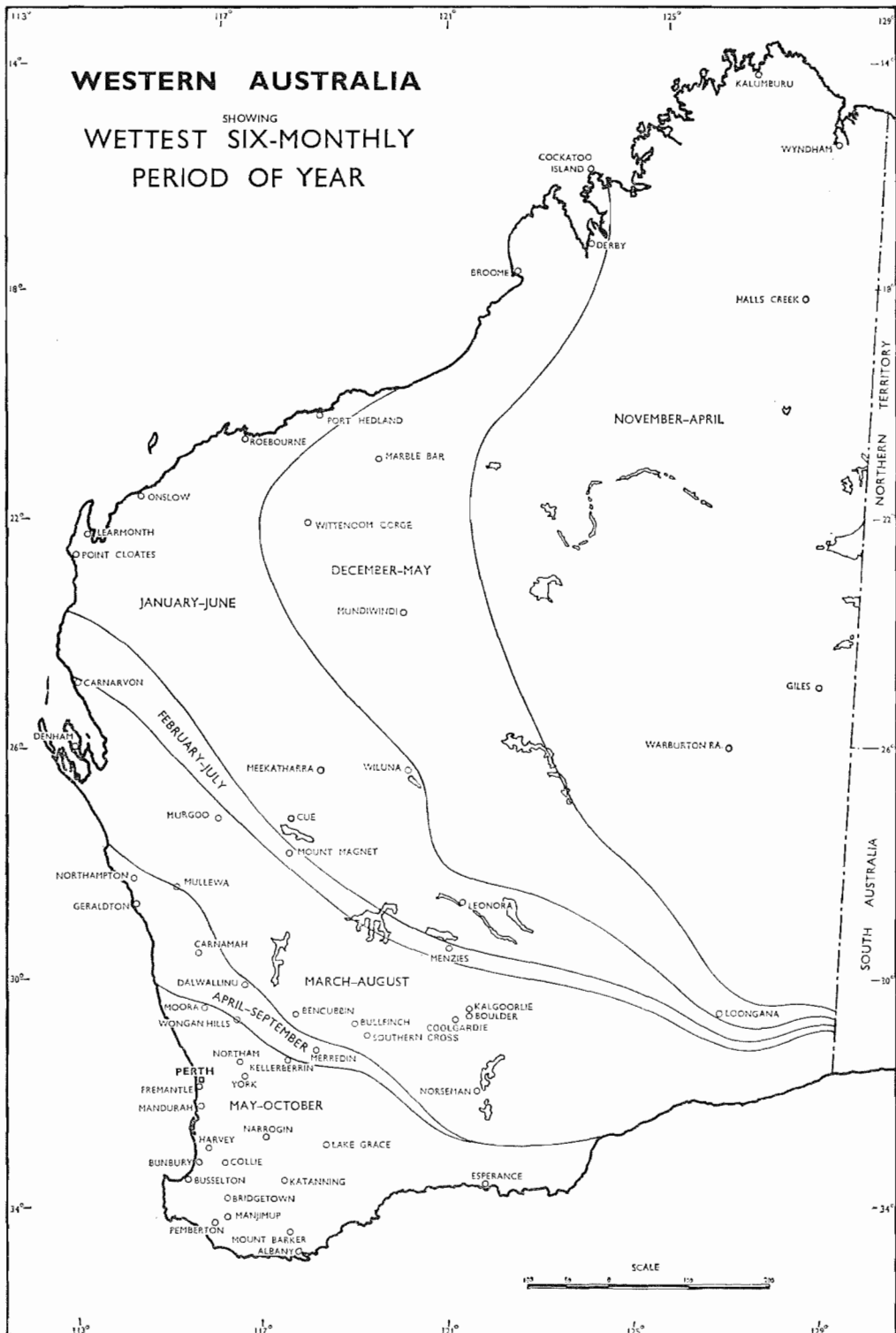
Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
WHEAT BELT													
<i>Carnamah</i> †—													
Rainfall —Average (mm)	11	15	22	22	52	85	71	54	29	18	10	9	398
Highest (mm)	103	103	180	107	170	231	188	192	84	73	91	56	782
Lowest (mm)	0	0	0	0	2	21	13	12	0.6	0	0	0	204
Highest one day (mm)	97	60	153	89	74	61	43	66	33	40	71	50	153
Wet days—Average number	2	2	2	4	9	12	13	11	8	6	2	2	73
<i>Wongan Hills</i> †—													
Rainfall —Average (mm)	11	14	21	22	52	80	71	52	27	20	10	10	390
Highest (mm)	70	110	166	81	188	220	175	131	72	66	43	58	675
Lowest (mm)	0	0	0	0	0.2	22	8	8	2	0	0	0	161
Highest one day (mm)	69	80	81	62	63	70	41	34	37	36	30	57	81
Wet days—Average number	1	1	2	4	8	11	13	10	7	5	2	1	65
<i>Kellerberrin</i> †—													
Rainfall —Average (mm)	11	14	23	21	43	60	55	42	26	19	11	13	338
Highest (mm)	87	127	152	109	106	163	123	100	73	77	68	67	661
Lowest (mm)	0	0	0	0	0	15	10	3	2	0.2	0	0	172
Highest one day (mm)	52	108	103	58	40	53	38	40	24	43	33	57	108
Wet days—Average number	2	2	3	5	8	12	13	10	8	6	3	2	74
<i>Southern Cross</i> †—													
Rainfall —Average (mm)	15	20	25	21	34	40	38	29	19	15	13	12	281
Highest (mm)	113	137	169	128	119	183	107	88	106	79	74	72	575
Lowest (mm)	0	0	0	0	0	5	11	0.6	0	0	0	0	118
Highest one day (mm)	63	84	61	44	55	43	36	30	52	55	51	40	84
Wet days—Average number	3	2	4	4	7	8	9	9	6	5	3	2	62
<i>Merredin</i> †—													
Rainfall —Average (mm)	12	12	23	22	41	54	54	39	25	20	12	12	326
Highest (mm)	93	80	161	114	132	150	126	86	86	75	69	92	564
Lowest (mm)	0	0	0	0	1	6	9	1	0	0.8	0	0	130
Highest one day (mm)	66	66	83	60	49	59	46	34	45	27	37	49	83
Wet days—Average number	2	3	3	4	8	11	12	10	7	6	3	2	71
<i>Northam</i> †—													
Rainfall —Average (mm)	8	12	20	23	58	85	86	62	36	25	10	9	434
Highest (mm)	56	190	189	84	148	233	221	170	129	100	41	66	711
Lowest (mm)	0	0	0	0	1	10	20	3	3	0	0	0	194
Highest one day (mm)	38	116	126	75	65	57	56	38	46	47	32	50	126
Wet days—Average number	2	2	3	5	10	14	15	13	10	7	3	2	86
<i>Wandering</i> †—													
Rainfall —Average (mm)	9	14	22	34	81	123	117	95	64	44	18	14	635
Highest (mm)	56	244	122	121	195	368	324	270	192	129	65	106	1,050
Lowest (mm)	0	0	0	0	11	25	34	14	8	1	0	0	297
Highest one day (mm)	49	138	104	51	61	85	69	53	46	43	48	63	138
Wet days—Average number	3	3	5	8	13	17	19	17	13	11	6	4	119
<i>Narrogin</i> †—													
Rainfall —Average (mm)	9	16	23	30	65	93	91	69	48	34	15	13	506
Highest (mm)	69	237	128	126	152	300	243	185	121	123	77	95	741
Lowest (mm)	0	0	0	0	10	25	25	16	7	2	0	0	268
Highest one day (mm)	50	115	114	63	68	71	81	42	37	35	38	50	115
Wet days—Average number	2	2	4	6	11	13	15	14	11	8	4	3	93
<i>Katanning</i> †—													
Rainfall —Average (mm)	11	16	25	31	62	82	78	63	47	38	20	17	490
Highest (mm)	87	225	134	162	148	214	174	173	123	114	90	74	782
Lowest (mm)	0	0	0	0.6	7	21	22	13	4	4	0	0	272
Highest one day (mm)	64	126	70	106	59	70	46	44	37	50	55	55	126
Wet days—Average number	3	3	5	7	12	15	17	15	13	10	5	4	109
OTHER INLAND													
<i>Halls Creek</i> †—													
Rainfall —Average (mm)	132	118	66	17	9	6	7	3	4	13	32	75	482
Highest (mm)	578	373	369	164	167	71	80	56	53	104	200	230	1,068
Lowest (mm)	5	3	0	0	0	0	0	0	0	0	0	3	214
Highest one day (mm)	211	130	174	147	61	31	36	52	31	36	50	91	211
Wet days—Average number	12	12	6	3	2	1	1	0	1	2	6	9	55

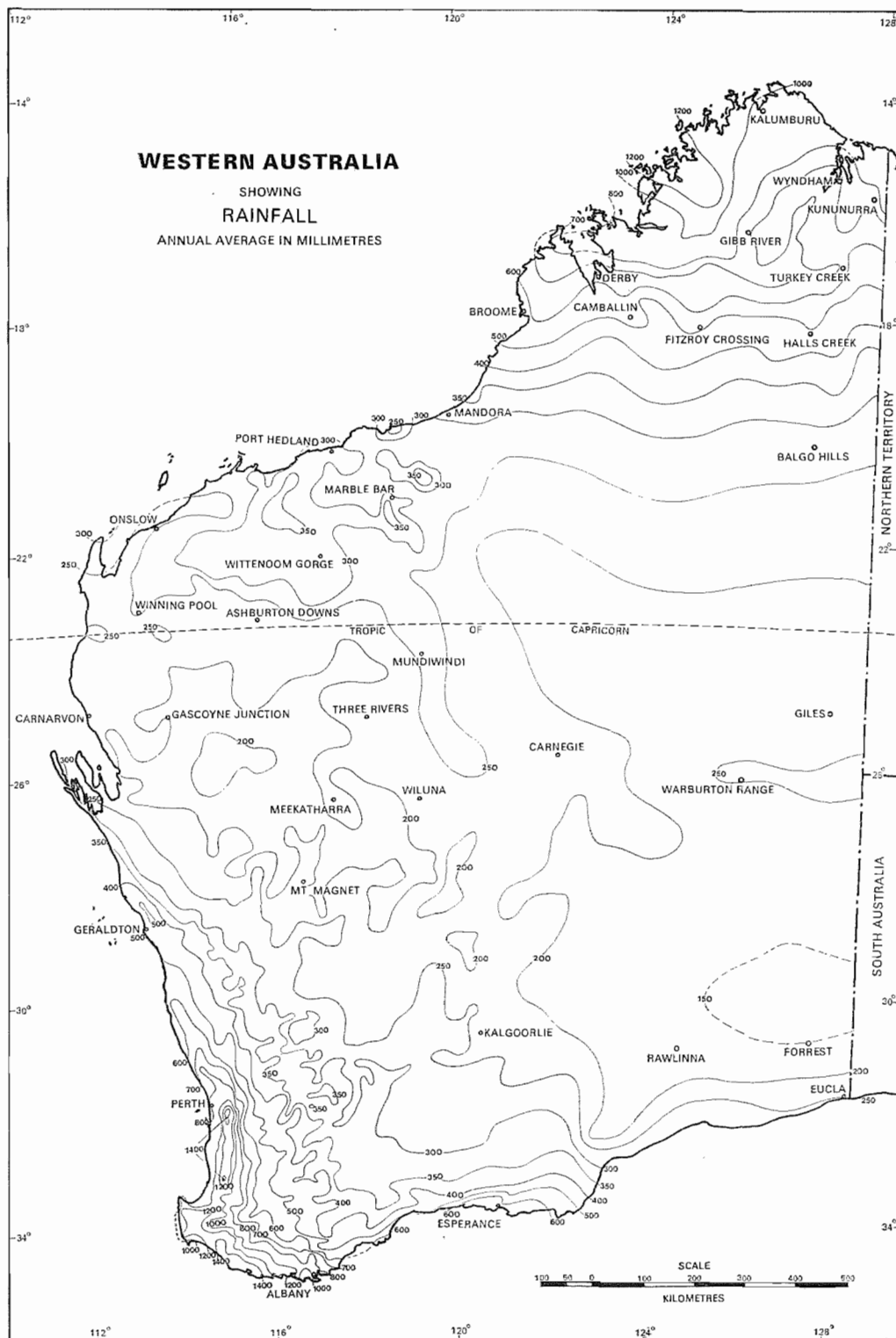
† Post Office.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND—<i>continued</i>													
<i>Marble Bar</i> †—													
Rainfall—Average (mm)	71	75	51	20	24	26	12	5	1	4	9	34	332
Highest (mm)	310	235	389	241	149	165	134	34	24	116	61	243	742
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	71
Highest one day (mm)	146	121	305	136	91	105	63	32	24	84	60	150	305
Wet days—Average number	7	6	4	2	2	2	2	1	0	0	2	4	32
<i>Mundivindi</i> †—													
Rainfall—Average (mm)	44	44	45	22	22	22	8	8	4	8	11	25	263
Highest (mm)	321	325	267	180	121	205	70	53	61	93	71	160	816
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	26
Highest one day (mm)	76	71	175	60	56	123	43	39	34	53	58	114	175
Wet days—Average number	6	6	5	3	3	3	2	2	1	1	3	4	39
<i>Warburton Range</i> —													
Rainfall—Average (mm)	22	29	22	20	19	20	10	10	4	10	18	23	207
Highest (mm)	177	149	180	110	91	99	54	72	25	48	83	95	691
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	35
Highest one day (mm)	58	78	101	77	41	42	22	35	24	18	47	61	101
Wet days—Average number	4	3	3	3	4	3	3	2	1	2	3	5	36
<i>Meekatharra</i> †—													
Rainfall—Average (mm)	31	28	38	22	26	29	15	15	4	4	8	11	231
Highest (mm)	214	134	209	138	131	135	59	77	36	26	78	104	516
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	49
Highest one day (mm)	88	84	103	109	77	56	34	40	34	21	82	69	109
Wet days—Average number	5	4	4	3	5	7	6	3	2	1	1	2	43
<i>Laverton</i> †—													
Rainfall—Average (mm)	25	23	33	24	25	24	14	13	7	8	14	15	225
Highest (mm)	142	144	122	204	124	126	66	85	67	50	152	135	453
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	66
Highest one day (mm)	75	87	67	47	62	40	33	41	44	49	91	71	91
Wet days—Average number	3	3	3	4	4	5	4	3	2	2	2	2	37
<i>Kalgoorlie</i> †—													
Rainfall—Average (mm)	16	21	27	21	27	26	22	23	11	17	14	16	241
Highest (mm)	204	314	166	103	87	77	56	81	84	80	70	65	458
Lowest (mm)	0	0	0	0	0	0	2	0	0	0	0	0	121
Highest one day (mm)	96	178	71	69	43	38	26	31	25	62	44	37	178
Wet days—Average number	3	4	4	5	7	8	9	7	5	4	3	3	62
<i>Rawlinna</i> †—													
Rainfall—Average (mm)	15	16	19	18	19	19	13	15	11	13	11	15	184
Highest (mm)	210	123	85	114	81	130	53	155	85	63	81	117	497
Lowest (mm)	0	0	0	0	0	0	0	0	0	0	0	0	79
Highest one day (mm)	100	73	47	58	31	38	25	66	72	31	65	49	100
Wet days—Average number	2	2	3	3	4	5	4	4	3	3	3	2	38
<i>Collie</i> †—													
Rainfall—Average (mm)	14	14	26	50	131	196	190	146	104	71	28	17	987
Highest (mm)	77	178	105	183	263	474	440	414	248	213	89	81	1,466
Lowest (mm)	0	0	0	4	15	58	52	31	14	2	0.6	0.2	604
Highest one day (mm)	57	106	84	63	62	91	69	73	58	49	36	3.2	106
Wet days—Average number	4	3	6	10	16	19	21	19	17	13	8	5	141
<i>Manjimup</i> †—													
Rainfall—Average (mm)	20	19	34	64	139	185	181	151	110	82	45	26	1,056
Highest (mm)	81	117	138	194	269	332	320	323	257	166	121	78	1,762
Lowest (mm)	0	0	0.6	9	26	86	43	49	24	9	3	0	650
Highest one day (mm)	46	44	89	77	79	83	50	54	59	43	49	32	89
Wet days—Average number	6	5	8	11	18	20	22	21	16	15	11	8	161
<i>Pemberton</i> —													
Rainfall—Average (mm)	21	17	45	88	160	215	228	169	123	94	57	41	1,258
Highest (mm)	147	88	132	213	338	373	397	399	218	194	158	96	1,752
Lowest (mm)	1	1	3	10	36	118	130	84	49	13	6	3	801
Highest one day (mm)	64	34	79	81	79	63	71	46	41	53	56	41	79
Wet days—Average number	7	5	9	12	18	20	21	20	17	15	12	9	165
<i>Mount Barker</i> †—													
Rainfall—Average (mm)	22	24	38	57	86	102	106	93	83	73	41	30	755
Highest (mm)	179	178	128	234	243	209	261	173	157	160	155	87	1,099
Lowest (mm)	1	0.8	4	4	16	43	22	33	18	16	3	1	429
Highest one day (mm)	105	72	49	139	69	52	72	66	44	54	64	44	139
Wet days—Average number	7	7	10	12	17	19	20	19	17	16	11	9	164

† Post Office.





[illegible]

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—continued													
<i>Esperance—</i>													
Temperature:													
Mean max., °C	24.8	25.3	24.1	22.3	19.7	17.6	16.7	17.5	19.1	20.2	22.2	23.6	21.1
Mean min., °C	15.5	15.7	14.9	12.4	10.2	8.2	7.4	7.6	8.8	10.2	12.4	14.2	11.4
Highest max., °C	47.2	44.1	43.6	38.9	33.1	27.2	26.0	31.5	35.6	39.9	42.2	44.4	47.2
Lowest min., °C	4.9	4.9	3.9	3.3	1.7	0.0	-0.6	0.0	1.3	1.0	3.3	4.4	-0.6
No. of days 32.2°C and over	3.1	3.1	2.6	0.8	0.1	0.0	0.0	0.0	0.1	0.6	1.6	2.5	14.5
No. of days 37.8°C and over	1.2	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.8	3.8
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.1	0.8	0.9	0.5	0.2	0.0	0.0	0.0	2.5
<i>Eucla—</i>													
Temperature:													
Mean max., °C	25.7	25.8	25.3	23.8	21.4	18.7	18.1	19.4	21.2	22.7	23.7	25.0	22.6
Mean min., °C	16.9	17.2	16.1	13.5	10.4	8.0	6.8	7.3	8.8	11.1	13.6	15.4	12.1
Highest max., °C	50.7	48.9	44.4	41.4	35.8	33.3	32.1	34.9	40.0	43.1	46.7	49.3	50.7
Lowest min., °C	7.2	6.6	4.6	4.4	0.6	-2.2	-2.2	-1.6	-0.6	-0.3	2.8	3.3	-2.2
No. of days 32.2°C and over	3.0	3.0	4.0	2.0	1.0	0.0	0.0	0.0	0.0	4.0	4.0	4.0	26.0
No. of days 37.8°C and over	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	12.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.0	1.0	3.0	2.0	0.0	0.0	0.0	0.0	6.0
WHEAT BELT													
<i>Carnamah—</i>													
Temperature:													
Mean max., °C	35.4	35.2	31.9	27.9	22.3	19.6	17.9	19.4	22.0	25.5	29.6	32.7	26.6
Mean min., °C	17.5	17.6	15.8	13.3	9.8	8.5	7.1	7.0	7.5	9.7	12.6	15.1	11.8
Highest max., °C	45.6	45.6	43.9	38.9	32.8	27.8	27.8	29.4	35.1	40.0	43.1	43.9	45.6
Lowest min., °C	5.1	6.9	6.7	1.7	1.1	0.0	0.6	0.7	1.0	1.1	2.3	6.7	0.0
No. of days 32.2°C and over	23.8	22.2	18.7	6.5	0.0	0.0	0.0	0.0	0.6	3.5	8.8	16.8	100.9
No. of days 37.8°C and over	12.2	9.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	5.9	33.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.1	0.5	0.8	0.8	0.3	0.0	0.0	0.0	2.5
<i>Wongan Hills—</i>													
Temperature:													
Mean max., °C	33.7	32.4	31.1	25.8	19.6	16.9	15.8	16.6	20.3	23.1	26.8	29.8	24.3
Mean min., °C	17.3	17.2	16.2	13.1	9.2	7.3	5.4	5.4	7.6	8.8	11.1	13.9	11.1
Highest max., °C	44.4	43.1	42.5	37.0	31.8	23.4	24.6	26.4	32.4	37.5	40.1	44.2	44.4
Lowest min., °C	8.8	9.5	5.6	2.8	1.2	0.6	0.1	-0.3	0.2	1.7	4.3	5.3	-0.3
No. of days 32.2°C and over	18.3	15.5	14.5	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5.2	10.7	67.9
No. of days 37.8°C and over	6.7	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	13.9
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.2	0.8	2.5	2.7	1.1	0.0	0.0	0.0	7.3
<i>Kellerberrin—</i>													
Temperature:													
Mean max., °C	33.9	33.5	30.2	26.2	20.7	17.4	16.3	17.8	21.2	24.5	29.4	32.5	25.3
Mean min., °C	16.4	16.3	14.9	11.2	8.1	6.4	5.3	5.5	6.6	8.8	12.5	14.9	10.6
Highest max., °C	46.1	46.7	44.4	39.2	35.6	26.9	24.4	28.1	36.5	39.4	43.1	45.0	46.7
Lowest min., °C	7.2	6.1	4.8	1.1	-2.2	-3.1	-3.3	-2.4	-1.1	0.3	1.7	5.6	-3.3
No. of days 32.2°C and over	19.9	16.7	11.3	2.7	0.2	0.0	0.0	0.0	0.2	1.8	8.5	15.0	76.3
No. of days 37.8°C and over	6.9	5.5	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	4.6	20.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	2.4	4.6	7.4	7.0	3.4	0.6	0.0	0.0	25.5
<i>Southern Cross—</i>													
Temperature:													
Mean max., °C	34.6	33.9	30.6	26.1	20.8	17.2	16.5	18.2	22.2	25.4	30.3	33.5	25.8
Mean min., °C	16.8	16.8	14.7	10.9	7.3	5.3	3.9	4.6	6.2	8.8	12.8	15.5	10.3
Highest max., °C	46.1	47.2	44.4	39.6	33.3	27.5	26.7	29.9	34.8	39.3	43.4	45.9	47.2
Lowest min., °C	5.6	5.6	3.4	-1.1	-3.3	-4.3	-5.0	-3.9	-3.3	-0.8	2.0	4.9	-5.0
No. of days 32.2°C and over	21.5	17.3	12.7	3.2	0.0	0.0	0.0	0.0	0.4	2.7	10.6	18.5	86.9
No. of days 37.8°C and over	9.1	7.2	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.0	6.4	27.4
No. of days 2.2°C and under	0.0	0.0	0.0	0.6	2.4	7.1	8.6	9.6	3.5	0.4	0.0	0.0	32.2
<i>Merredin—</i>													
Temperature:													
Mean max., °C	33.8	33.1	29.9	25.1	20.0	16.7	15.6	17.1	20.7	24.1	28.5	31.7	24.7
Mean min., °C	16.8	16.7	15.2	11.6	7.9	6.2	4.7	4.6	5.8	8.3	12.1	14.9	10.4
Highest max., °C	45.0	44.4	43.1	38.8	34.2	27.4	25.2	27.9	33.7	39.2	41.7	44.5	45.0
Lowest min., °C	7.5	6.1	5.1	-1.2	-3.9	-2.8	-3.7	-3.4	-2.5	-1.2	0.6	5.0	-3.9
No. of days 32.2°C and over	19.8	16.1	10.6	1.7	0.0	0.0	0.0	0.0	0.1	1.5	7.1	14.0	70.9
No. of days 37.8°C and over	6.2	5.0	1.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.7	3.5	17.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.4	1.4	4.2	6.5	8.7	4.2	0.8	0.0	0.0	26.2
<i>Northam—</i>													
Temperature:													
Mean max., °C	33.8	33.5	30.3	26.2	20.8	17.5	16.6	17.7	20.6	23.4	28.7	32.0	25.1
Mean min., °C	17.1	17.1	15.4	11.8	8.5	6.5	5.4	5.8	7.2	9.1	12.8	15.6	11.0
Highest max., °C	46.2	46.7	43.9	39.4	33.9	27.2	24.4	28.0	34.6	39.4	44.0	45.6	46.7
Lowest min., °C	7.3	7.5	5.5	0.6	-2.7	-3.9	-2.1	-1.1	-0.9	0.4	3.0	5.6	-3.9
No. of days 32.2°C and over	20.2	17.3	11.7	3.2	0.1	0.0	0.0	0.0	0.1	1.3	7.1	13.0	76.0
No. of days 37.8°C and over	7.3	5.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	4.5	21.3
No. of days 2.2°C and under	0.0	0.0	0.0	0.2	1.1	4.7	5.5	6.2	2.0	0.2	0.0	0.0	19.9

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
WHEAT BELT—continued													
<i>Wandering—</i>													
Temperature:													
Mean max., °C	31.3	30.7	27.8	23.8	18.8	15.8	15.1	15.8	18.3	20.9	26.1	29.4	22.8
Mean min., °C	13.6	13.3	12.0	8.6	6.4	4.7	3.9	4.1	5.2	6.6	9.4	11.9	8.3
Highest max., °C	45.6	43.8	41.9	36.1	30.6	25.0	22.1	26.1	30.0	36.9	39.7	42.8	45.6
Lowest min., °C	3.3	2.8	0.6	-2.2	-5.6	-5.7	-4.4	-3.9	-2.8	-2.2	-1.7	1.7	-5.7
No. of days 32-2°C and over	15.2	12.0	9.3	1.3	0.0	0.0	0.0	0.0	0.0	0.4	2.3	7.4	47.9
No. of days 37-8°C and over	3.7	2.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	8.0
No. of days 2-2°C and under	0.0	0.0	0.0	1.3	7.9	9.8	9.9	9.5	9.4	5.3	1.0	0.3	54.4
<i>Narrogin—</i>													
Temperature:													
Mean max., °C	30.8	30.1	27.2	22.9	18.1	15.1	14.3	15.2	17.8	20.7	25.6	28.8	22.2
Mean min., °C	13.6	13.6	12.4	10.1	7.6	6.2	5.1	5.1	5.8	6.9	9.5	11.7	8.9
Highest max., °C	43.7	42.8	40.9	35.7	31.9	26.2	21.2	24.9	30.4	37.8	39.7	43.2	43.7
Lowest min., °C	5.0	3.3	1.7	0.6	-1.1	-2.1	-3.9	-2.2	-1.2	-0.6	1.7	3.1	-3.9
No. of days 32-2°C and over	11.5	9.0	4.3	0.6	0.0	0.0	0.0	0.0	0.0	0.2	2.6	7.2	35.4
No. of days 37-8°C and over	2.1	1.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	5.3
No. of days 2-2°C and under	0.0	0.0	0.0	0.4	2.4	3.8	6.6	6.5	6.9	3.4	0.9	0.1	31.0
<i>Katanning—</i>													
Temperature:													
Mean max., °C	30.0	29.5	26.3	22.9	18.2	15.4	14.4	15.3	17.8	20.4	25.3	28.2	22.0
Mean min., °C	13.5	13.6	12.6	10.2	8.1	6.4	5.5	5.6	6.5	7.6	10.1	12.1	9.3
Highest max., °C	43.8	44.6	41.7	35.7	31.3	24.1	21.7	31.1	30.6	37.8	41.1	43.3	44.6
Lowest min., °C	5.0	3.3	1.7	0.6	-1.1	-2.1	-3.9	-2.2	-1.2	-0.6	-1.7	3.1	-3.9
No. of days 32-2°C and over	12.3	7.5	5.3	1.1	0.0	0.0	0.0	0.0	0.0	0.3	2.0	5.9	34.4
No. of days 37-8°C and over	2.6	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	5.2
No. of days 2-2°C and under	0.0	0.0	0.0	0.2	1.8	3.6	4.4	4.5	2.8	1.1	0.2	0.0	18.6
OTHER INLAND													
<i>Halls Creek—</i>													
Temperature:													
Mean max., °C	36.4	36.1	35.3	33.5	29.8	27.0	26.7	29.9	33.7	36.8	38.1	37.5	33.4
Mean min., °C	24.1	23.4	21.8	17.2	13.3	10.3	8.7	11.2	15.0	20.8	23.4	24.2	17.8
Highest max., °C	44.3	43.8	42.0	39.9	37.2	35.0	34.0	37.8	40.2	43.8	43.8	44.2	44.3
Lowest min., °C	15.6	12.2	11.0	7.2	2.4	0.2	-1.1	0.4	3.0	8.9	11.7	12.1	-1.1
No. of days 32-2°C and over	28.5	24.8	29.1	22.7	9.5	0.8	1.3	7.3	23.2	29.2	29.7	29.0	235.1
No. of days 37-8°C and over	17.8	8.5	9.6	1.6	0.0	0.0	0.0	0.0	0.7	12.7	17.6	19.2	87.7
No. of days 2-2°C and under	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	1.1
<i>Marble Bar—</i>													
Temperature:													
Mean max., °C	41.2	40.8	39.4	36.1	31.1	27.2	27.0	29.9	34.3	37.8	41.1	41.9	35.7
Mean min., °C	26.1	25.9	24.9	20.8	16.3	12.6	11.3	13.7	16.5	20.4	24.0	25.6	19.8
Highest max., °C	49.2	48.3	46.7	45.0	39.4	33.9	35.0	37.2	42.6	45.6	47.2	48.3	49.2
Lowest min., °C	18.9	13.9	15.3	11.1	5.6	1.1	2.2	3.9	5.6	10.0	14.4	17.2	1.1
No. of days 32-2°C and over	30.3	26.5	28.8	26.0	10.1	0.5	0.8	7.3	22.6	26.3	30.0	30.5	239.7
No. of days 37-8°C and over	27.9	22.1	18.9	8.8	0.2	0.0	0.0	0.0	2.0	12.6	24.2	28.7	145.4
No. of days 2-2°C and under	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	1.0
<i>Mundivindi—</i>													
Temperature:													
Mean max., °C	38.1	37.1	34.4	30.4	25.4	21.3	21.1	23.7	28.4	31.9	35.7	37.7	30.4
Mean min., °C	23.1	22.6	20.6	15.7	10.7	6.3	5.2	7.2	10.7	14.8	19.3	21.8	14.8
Highest max., °C	44.6	44.4	42.3	40.6	36.4	29.8	30.6	37.2	37.2	41.4	43.3	44.4	44.6
Lowest min., °C	13.9	12.8	9.4	3.9	-1.7	-4.4	-5.3	-3.6	-1.7	3.3	7.8	11.7	-5.3
No. of days 32-2°C and over	29.3	25.3	25.4	11.6	0.6	0.0	0.0	0.4	5.6	15.9	25.3	29.1	168.5
No. of days 37-8°C and over	20.3	15.7	10.2	0.2	0.0	0.0	0.0	0.0	0.0	1.3	9.8	19.9	77.4
No. of days 2-2°C and under	0.0	0.0	0.0	0.0	0.6	5.6	7.3	3.7	0.2	0.0	0.0	0.0	17.4
<i>Warburton Range—</i>													
Temperature:													
Mean max., °C	36.7	36.1	33.6	28.6	23.1	20.6	20.1	22.3	26.9	30.0	32.9	36.1	28.9
Mean min., °C	22.1	21.4	19.9	14.8	9.7	6.4	5.6	7.2	10.6	13.9	17.6	20.8	14.2
Highest max., °C	46.6	46.9	43.4	40.4	33.3	32.3	31.7	34.3	39.9	42.7	44.4	46.3	46.9
Lowest min., °C	10.0	9.1	9.6	1.8	-1.1	-2.6	-4.1	-2.2	1.1	4.1	7.2	9.4	-4.1
No. of days 32-2°C and over	26.0	23.0	22.0	7.0	0.0	0.0	0.0	0.0	6.0	13.0	19.0	26.0	142.0
No. of days 37-8°C and over	16.0	13.0	9.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	8.0	14.0	63.0
No. of days 2-2°C and under	0.0	0.0	0.0	0.0	1.0	4.0	6.0	5.0	0.0	0.0	0.0	0.0	16.0
<i>Meekatharra—</i>													
Temperature:													
Mean max., °C	38.0	37.6	34.4	29.8	24.4	20.3	19.7	21.8	25.9	29.3	33.8	36.8	29.3
Mean min., °C	22.8	22.8	20.8	16.1	11.4	7.9	6.7	8.1	10.6	13.8	18.2	21.1	15.0
Highest max., °C	45.0	45.6	43.6	40.1	34.7	29.4	27.9	32.6	36.1	39.4	42.8	43.7	45.6
Lowest min., °C	12.2	12.3	10.3	5.8	0.6	-3.1	-0.2	0.1	1.1	4.6	6.1	11.1	-3.1
No. of days 32-2°C and over	28.8	24.3	21.7	9.8	0.3	0.0	0.0	0.1	1.8	8.3	17.9	25.6	138.6
No. of days 37-8°C and over	18.6	13.7	6.2	0.3	0.0	0.0	0.0	0.0	0.0	0.4	3.5	10.6	53.3
No. of days 2-2°C and under	0.0	0.0	0.0	0.0	0.2	0.9	1.3	0.1	0.0	0.0	0.0	0.0	2.5

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

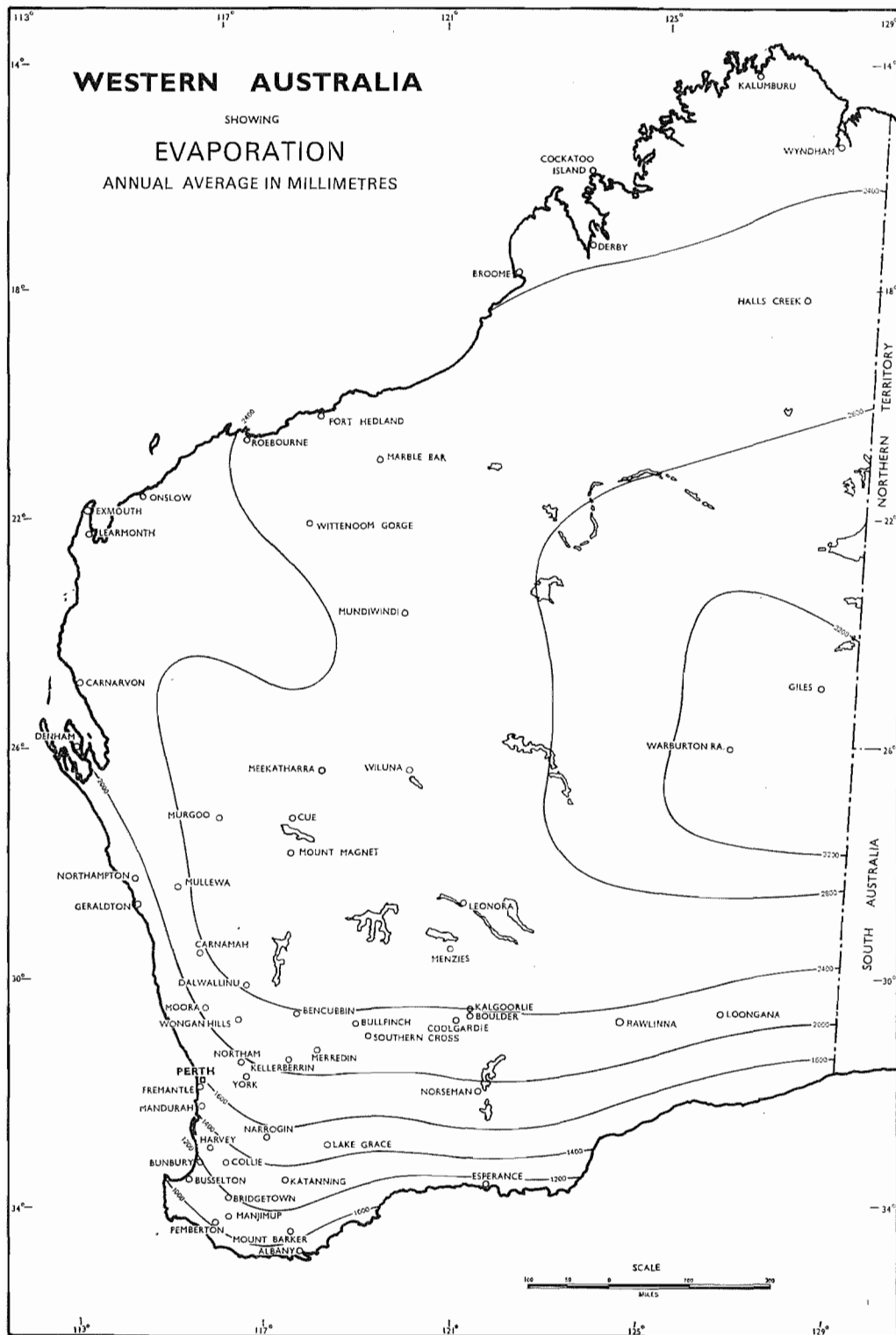
Reporting station and characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND—continued													
Laverton—													
Temperature:													
Mean max., °C	35.8	35.0	31.8	27.3	22.1	18.3	17.8	20.1	24.6	27.8	32.0	34.9	27.3
Mean min., °C	20.4	20.1	18.0	13.8	9.4	6.4	5.2	6.5	9.6	12.6	16.6	19.3	13.2
Highest max., °C	46.1	46.1	44.4	40.0	35.0	30.2	30.1	33.9	36.8	40.6	43.9	45.6	46.1
Lowest min., °C	10.0	7.5	6.1	2.8	-0.9	-2.8	-4.2	-2.8	-1.1	2.2	4.4	10.0	-4.2
No. of days 32.2°C and over	24.0	20.0	15.0	5.0	0.0	0.0	0.0	0.0	2.0	7.0	16.0	23.0	112.0
No. of days 37.8°C and over	12.0	10.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.0	10.0	42.0
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	1.0	4.0	6.0	4.0	0.0	0.0	0.0	0.0	15.0
Kalgoorlie—													
Temperature:													
Mean max., °C	34.0	33.9	30.2	25.8	21.2	17.6	16.9	18.9	23.1	26.1	30.2	32.8	25.9
Mean min., °C	17.9	18.0	16.3	12.9	9.4	6.9	6.1	6.6	9.0	11.5	14.6	16.8	12.2
Highest max., °C	45.8	46.1	43.9	39.2	33.3	27.7	27.2	30.6	35.6	40.7	43.7	45.0	46.1
Lowest min., °C	8.4	8.9	5.3	1.7	-1.8	-2.6	-3.3	-2.4	-0.6	-1.0	3.4	7.5	-3.3
No. of days 32.2°C and over	18.8	12.9	10.8	2.9	0.1	0.0	0.0	0.0	0.4	2.9	7.4	14.8	71.0
No. of days 37.8°C and over	7.5	4.3	2.7	0.3	0.0	0.0	0.0	0.0	0.1	1.3	3.9	20.1	20.1
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.3	1.8	3.9	3.6	0.3	0.0	0.0	0.0	10.0
Rawlinna—													
Temperature:													
Mean max., °C	32.2	32.1	29.1	25.6	21.8	18.5	17.9	19.6	23.6	26.1	29.1	31.6	25.6
Mean min., °C	14.9	15.1	14.3	11.2	8.0	5.3	4.1	5.1	7.4	9.7	12.3	14.2	10.1
Highest max., °C	47.8	46.4	44.4	40.0	35.0	31.3	29.4	33.9	39.3	41.7	44.6	45.7	47.8
Lowest min., °C	5.6	5.0	6.1	1.7	0.0	-1.6	-2.3	-3.2	-0.2	0.7	2.4	5.1	-3.2
No. of days 32.2°C and over	14.8	10.8	10.3	2.8	0.5	0.0	0.0	0.0	1.7	3.6	7.9	13.3	65.7
No. of days 37.8°C and over	6.8	3.5	3.2	0.2	0.0	0.0	0.0	0.0	0.1	0.8	2.5	5.7	22.8
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	1.2	3.5	5.3	4.4	0.8	0.2	0.0	0.0	15.4
Collie—													
Temperature:													
Mean max., °C	30.2	29.8	26.9	23.5	18.8	16.3	15.4	16.1	18.2	20.4	25.1	28.3	22.4
Mean min., °C	13.1	12.7	11.4	8.4	6.1	4.7	3.9	4.3	5.8	7.4	9.8	11.7	8.3
Highest max., °C	44.4	43.4	40.8	36.7	30.4	24.4	22.8	26.1	30.3	36.3	38.8	41.2	44.4
Lowest min., °C	3.2	1.8	0.2	-1.3	-2.2	-4.0	-3.9	-3.2	-2.2	-0.6	0.3	1.7	-4.0
No. of days 32.2°C and over	13.0	11.3	8.0	1.2	0.0	0.0	0.0	0.0	0.0	0.3	2.1	5.7	41.6
No. of days 37.8°C and over	2.2	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	5.5
No. of days 2.2°C and under	0.0	0.0	0.1	0.8	5.3	7.8	7.9	6.6	5.9	1.8	0.3	0.1	36.6
Manjimup—													
Temperature:													
Mean max., °C	25.7	26.3	23.8	20.8	17.1	15.2	14.1	14.8	16.3	18.2	21.7	24.1	19.8
Mean min., °C	12.1	12.2	11.7	10.3	8.1	6.9	5.8	6.1	6.5	7.9	9.6	11.0	9.0
Highest max., °C	41.7	40.6	38.9	33.3	27.2	22.2	21.7	24.7	28.1	33.3	37.4	37.8	41.7
Lowest min., °C	5.6	4.4	3.3	1.7	1.1	0.6	-2.8	-1.1	-0.6	0.6	1.7	4.4	-2.8
No. of days 32.2°C and over	5.7	4.3	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.0	16.1
No. of days 37.8°C and over	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.5	1.3	2.3	3.2	2.1	0.1	0.0	0.0	9.6
Pemberton—													
Temperature:													
Mean max., °C	25.9	25.8	23.9	20.5	17.6	15.6	14.4	15.3	16.4	18.1	21.0	23.3	19.8
Mean min., °C	13.0	13.4	12.7	10.7	9.1	8.2	6.9	6.8	7.2	8.1	9.9	11.6	9.8
Highest max., °C	41.1	39.4	38.9	33.9	26.7	22.2	21.1	25.6	28.3	30.6	35.0	37.8	41.1
Lowest min., °C	4.4	4.4	3.9	2.8	0.0	1.1	0.0	-1.1	-0.3	1.7	2.1	3.9	-1.1
No. of days 32.2°C and over	3.9	2.8	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.1	12.2
No. of days 37.8°C and over	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
No. of days 2.2°C and under	0.0	0.0	0.0	0.0	0.2	0.7	1.3	1.6	0.9	0.2	0.0	0.0	4.9
Mount Barker—													
Temperature:													
Mean max., °C	25.6	25.7	23.4	20.9	17.2	14.9	14.0	14.8	16.6	18.5	21.8	24.1	19.8
Mean min., °C	12.3	12.4	11.9	10.3	8.2	6.7	5.6	5.8	6.7	7.7	9.6	11.2	9.1
Highest max., °C	43.9	43.6	40.6	36.0	30.6	24.3	21.1	25.0	29.3	35.6	39.4	42.9	43.9
Lowest min., °C	1.7	3.9	3.6	2.2	0.6	0.0	-2.2	-1.3	-0.6	0.6	1.1	1.1	-2.2
No. of days 32.2°C and over	4.3	4.0	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.1	1.0	2.8	15.1
No. of days 37.8°C and over	0.8	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	2.2
No. of days 2.2°C and under	0.0	0.0	0.0	0.1	0.3	1.5	3.5	3.3	1.9	0.4	0.0	0.0	11.0

THUNDERSTORMS

Thunderstorms are most frequent along the Kimberley coast where they occur during the 'Wet' season but are practically unknown in the 'Dry'. In the remainder of the tropics they occur over roughly the same period but the season is a little shorter and the storms less frequent.

In most of the State south from the tropics thunderstorms are most frequent in the summer months but in the south-west they are more uniformly distributed and in many places in coastal districts they are most frequent in winter.

The winter storms are often accompanied by hail which, however, is usually not heavy enough to cause any damage. Hail accompanying summer storms can be much heavier, and occasionally damages ripening crops in the wheat belt. Both winter and summer thunderstorms may be accompanied by severe squalls, but these are infrequent.



EVAPORATION

Except in the lower south-west, evaporation from a free water surface exceeds the annual rainfall, and in a large proportion of the State it is more than ten times greater than the rainfall.

It is least in the winter months, amounting in July to less than twenty-five millimetres in the far south-west, and to about 200 millimetres in the northern tropics. In January, when evaporation is highest, it totals about 130 millimetres on the far south coast and reaches 350 millimetres in the East Gascoyne and North-Eastern Meteorological Districts. Further north, evaporation is reduced by the moister air over the tropics at this time of the year.

The map on page 42 shows average annual evaporation throughout the State.

GROWING SEASON

Less moisture is required to sustain plant life when evaporation is low than when it is high, and the minimum amount required can be related to evaporation from a free water surface.

That part of the year during which rainfall is greater than this minimum amount (the 'effective rainfall'), may be taken as the *growing season*. The map on page 44 shows the length of this season in the agricultural area of the State. It is based on average monthly rainfall and effective rainfall, the latter being calculated from the formula $P = 0.54 \times E^{0.7}$ (after Prescott), where P is effective rainfall and E is evaporation (both in millimetres per month).

METROPOLITAN CLIMATE

Perth has more sunshine and a greater number of clear days during the year than any other State capital city. It also has the wettest winter, the driest summer, and is the windiest of the capital cities. The highest temperature on record for Perth is 44.6°C (8 February 1933) and the lowest 1.2°C (7 July 1916).

CLIMATOLOGICAL DATA—PERTH BUREAU OF METEOROLOGY

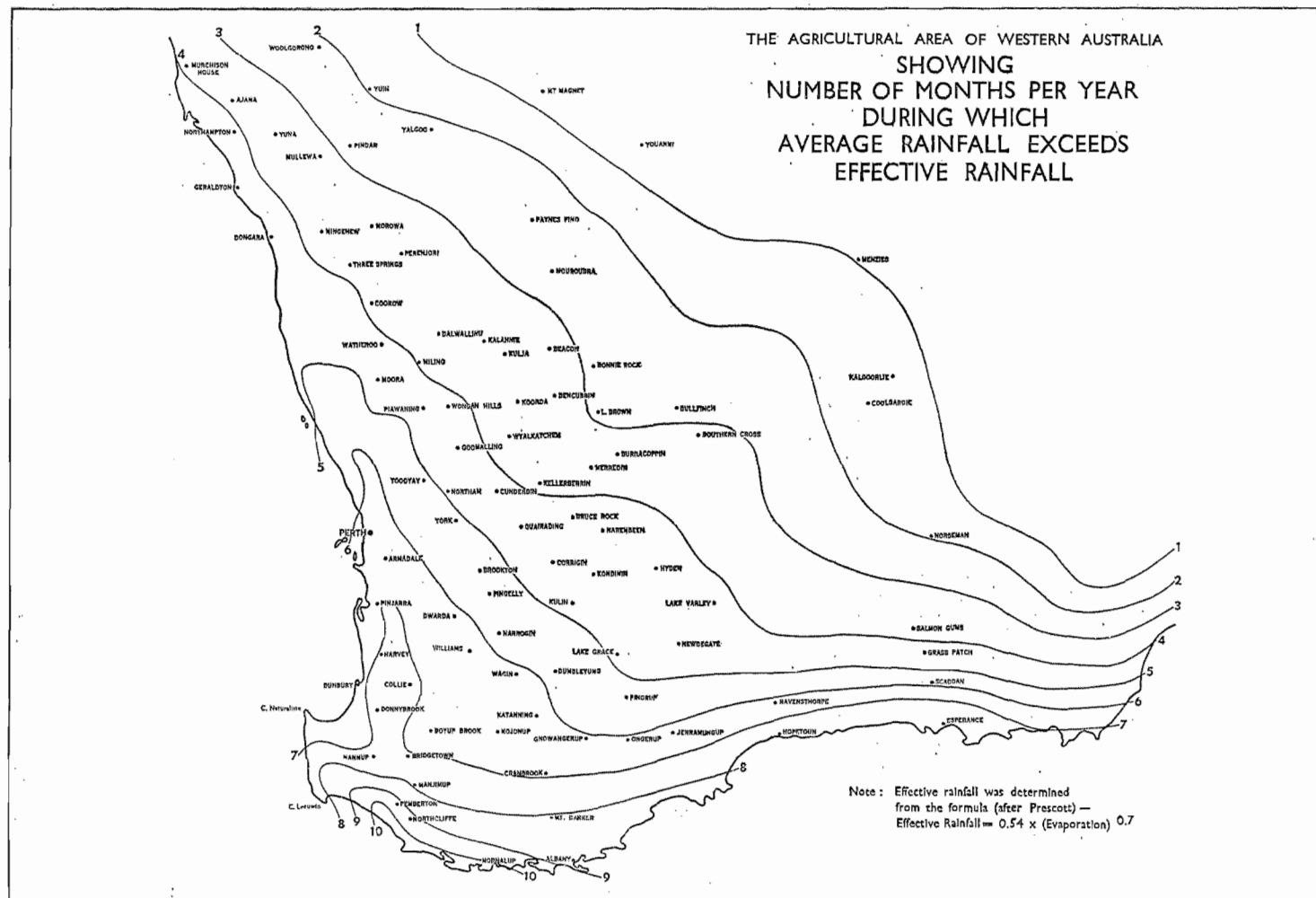
(For other data relating to Temperature and Rainfall see preceding tables)

Month	Wind				Temperature		Relative humidity (Saturation = 100%)		Sun- shine Mean daily amount	Cloud (proportion of sky covered) Mean of readings at 9 a.m., 3 p.m. and 9 p.m.	Evapora- tion Mean amount		
	Prevailing direction		Speed		Highest in sun	Lowest terrestrial	Mean	At 3 p.m.					
	9 a.m.	3 p.m.	Average	High- est									
Number of years of observations	30 (a)		30 (a)	54	62	67	30 (a)		30 (a)	30 (a)	30 (a)		
January	E.	SSW.	km/h 17.5	km/h 80	°C 80.7	date 22/1914	°C 4.2	date 20/1925	% 53	% 43	hours 10.4	% 29	mm 263
February	ENE.	SSW.	17.2	87	78.7	4/1934	1.2	1/1913	52	43	9.8	31	219
March	E.	SSW.	16.3	113	75.0	19/1918	2.6	(b)	57	46	8.8	35	191
April	ENE.	SSW.	13.7	101	69.4	8/1916	0.7	26/1960	60	48	7.5	42	117
May	NE.	WSW.	13.5	119	63.3	4/1925	3.9	31/1964	68	58	5.7	54	71
June	N.	NW.	13.5	129	57.5	9/1914	3.3	27/1946	72	63	4.8	59	46
July	NNE.	W.	14.2	137	56.2	13/1915	3.8	30/1920	73	63	5.4	56	45
August	N.	WNW.	15.1	156	62.8	29/1921	3.0	18/1966	71	60	6.0	56	60
September	ENE.	SSW.	15.1	109	67.6	29/1916	2.6	(c)	64	57	7.2	49	87
October	SE.	SW.	16.1	105	71.8	19/1954	1.2	16/1931	64	54	8.1	48	137
November	E.	SW.	17.2	101	75.0	30/1925	1.6	1/1968	57	47	9.6	39	194
December	E.	SSW.	17.7	102	76.0	11/1927	3.3	29/1957	54	46	10.4	32	246
Year—													
Average...	E.	SSW.	15.6	....	....	....	....	....	62	52	7.8	44	....
Extremes	....	....	....	156	80.7	22/1/14	3.9	31/5/64	....	....	....	....	....
Total ....	....	....	....	....	....	....	....	....	....	....	....	....	1,676

(a) Standard 30 years' normal (1911–1940).
8 September 1952 and 6 September 1956.

(b) Recorded on 8 March 1903 and 16 March 1967.

(c) Recorded on



SNOW

Snow has been known to fall as far north as Wongan Hills, but it is only in the southern districts that it occasionally lies on the ground. It is seen on top of the Stirling Range for a short time nearly every winter, but elsewhere is very infrequent and of negligible importance.

INTERSTATE COMPARISONS

In general, humidity and rainfall are lower in Western Australia than in corresponding places in eastern Australia. The following table shows average rainfall, mean humidity and temperature for groups of reporting stations at approximately the same latitude. The stations have been selected in such a way that, in each pair, one is on the west coast and the other on the east coast or, where a pair relates to inland stations, each station is situated at about the same distance from the coast. The group appearing last in the table has been included to provide a comparison between observations at Albany, the most southerly town in Western Australia, and those at places elsewhere in Australia at about the same latitude. The height above mean sea-level is also given for each station.

INTERSTATE COMPARISONS—RAINFALL, HUMIDITY, TEMPERATURE

Reporting station	Height above mean sea- level	Average rainfall		Relative humidity (a)		Average daily mean temperature	
		May to October	November to April	May to October	November to April	May to October	November to April
	feet	mm	mm	%	%	°C	°C
Bunbury	17	761	127	77	70	13.9	19.7
Sydney, New South Wales	138	547	591	66	69	14.6	20.7
Perth	52	768	122	69	55	14.6	21.6
Newcastle, New South Wales	112	522	510	70	74	14.8	20.9
Kalgoorlie	1,247	131	115	58	48	14.4	23.6
Cobar, New South Wales	822	149	171	59	46	13.5	24.0
Geraldton	13	407	61	67	62	16.8	22.8
Brisbane, Queensland	137	305	713	66	69	17.4	23.7
Wihuna	1,700	82	167	50	35	15.8	27.2
Charleville, Queensland	965	157	299	55	46	16.2	26.4
Carnarvon	15	165	66	63	63	18.6	25.2
Bundaberg, Queensland	45	276	800	73	74	18.1	24.3
Mundiwindi	1,840	70	210	39	30	17.2	28.0
Longreach, Queensland	612	100	295	50	50	18.7	27.9
Onslow	14	113	124	55	56	20.7	28.3
Mackay, Queensland	35	292	1,312	78	80	19.3	25.4
Port Hedland	25	85	234	50	59	22.6	29.6
Townsville, Queensland	73	139	954	66	73	22.1	26.8
Derby	53	42	604	51	65	24.9	30.3
Innisfail, Queensland	22	911	2,623	85	85	20.9	25.6
Wyndham	23	29	648	43	59	27.2	31.1
Cooktown, Queensland	17	205	1,519	76	78	23.9	27.3
Albany	41	730	225	76	73	13.2	17.9
Adelaide, South Australia	140	366	169	64	45	13.6	20.9
Swan Hill, Victoria	230	200	132	70	54	11.9	21.0
Canberra, Australian Capital Territory	1,837	301	291	72	61	14.2	17.8

(a) Saturation = 100%.

AIR POLLUTION AND THE WEATHER

Although the total discharge of contaminants into the atmosphere in a given area remains relatively constant from day to day, the degree of pollution will vary widely. The observation that smoke is dissipated much more quickly and thoroughly on some days than on others is a direct result of differences in the weather.

Just as a river or stream is able to absorb a certain amount of pollution without the production of undesirable conditions, the atmosphere can also absorb a certain amount of contamination without bad effects. The dilution of air contaminants is a direct result of atmospheric turbulence. Consider a single source such as an industrial chimney. The plume of pollutants issuing from the chimney is obviously greatly affected by the wind. The stronger the wind, the greater the dilution; in a given interval, doubling the wind speed spreads the pollutants over double the volume. If the wind flow were perfectly smooth, the polluted air would travel downwind in a thin tube. However, the wind never blows perfectly smoothly; both the speed and direction fluctuate in a random manner. These are features of the phenomenon of turbulence, a characteristic of all natural motion. The effect of turbulence on the plume is to disperse it over a cone-shaped region many times greater in volume than if the flow were smooth. It is evident then that the greater the turbulence, the greater the spread of pollution from a given source.

Turbulence arises from two main causes. The first is the presence of obstacles such as trees, buildings, or fences on the surface over which the wind blows. These give rise to wind shears and eddies similar to those seen on the surface of a river flowing swiftly over a rocky bed or past the piers of a bridge. The second cause of turbulence is the vertical stability of the air. The temperature in the atmosphere normally decreases with increasing height. When the atmosphere is unstable, the temperature decreases rapidly with height and any parcel of air set in motion vertically will continue to rise spontaneously. Air will thus move freely from one level to another and any pollutants will be spread throughout a large volume.

However, under stable conditions the temperature decreases slowly with height. Turbulence and the vertical spread of pollutants is inhibited. In the extreme case, the air temperature, instead of decreasing with height, actually increases in a layer of limited depth. There is then said to be a temperature inversion. This inversion is a layer of extreme stability and the vertical interchange of air is almost completely damped out.

Inversions are of two main types—namely surface or subsidence inversions.

A surface inversion forms on calm nights when the sky is clear; the ground is cooled by the radiative loss of heat to the cloudless sky. The air near the ground is in its turn cooled and an inversion is established. The effect of such an inversion is often seen in Perth when a garden bonfire burns slowly on a still evening, particularly in the autumn months. The smoke is confined within the inversion layer. Cooling may continue throughout the night and under these conditions the inversion will become quite deep, of the order of a few hundred metres. If the air is moist, fog or mist often forms. Visibility will be reduced both as a result of the fog and the trapped smoke particles. On the average a surface inversion is formed on one in every three mornings in Perth, being more prevalent in spring and autumn.

By contrast, a subsidence inversion is formed when an anticyclone or high becomes established over a broad area. In these circumstances the base of the inversion will be at an upper level, varying between 1,500 and 2,000 metres in the case of Perth. There may be some vertical interchange of air in the levels below the inversion but the inversion itself acts as a 'lid' trapping the pollutants beneath it. As Perth's weather is controlled by the movement of the so-called subtropical high pressure belt, a subsidence inversion is a frequent feature of the vertical temperature structure.

Summing up, unstable conditions and associated gustiness lead to a rapid dispersion of pollution particles with moderate or low concentrations spread throughout an extensive volume of air—thus there is little pollution hazard. Stable conditions and in particular, inversions, lead to slow dispersion with high concentrations over a limited region.

The effects of different stability regimes on the emission from elevated chimney stacks are shown on page 47. Figure 1 (a) shows the plume form under unstable conditions. The plume is dispersed throughout a large volume. Figure 1 (b) illustrates the case of a subsidence inversion 'lid' trapping the particles in the layer close to the ground, whilst in figure 1 (c) the top of the surface inversion is below the top of the chimney and particles emitted from the stack remain in the upper levels and are well dispersed.

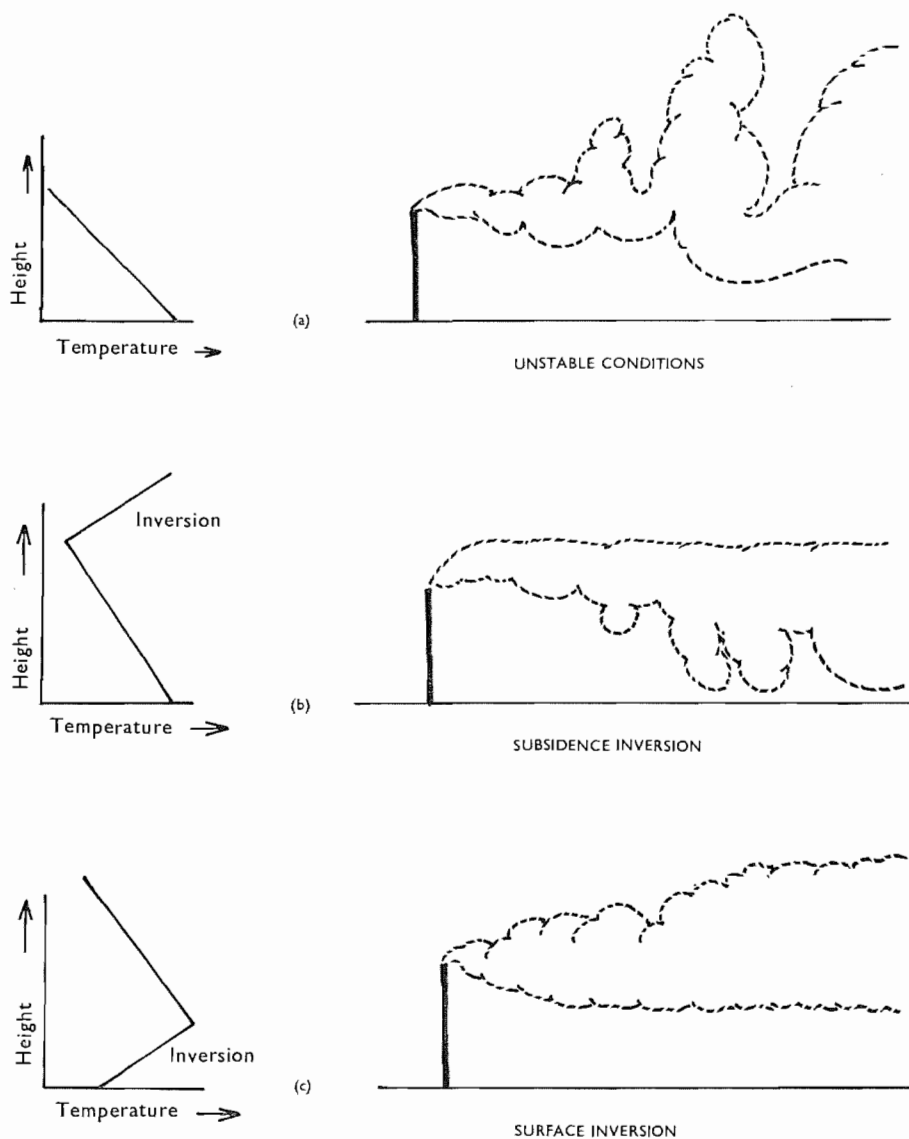


FIG. 1, THE DISPERSION OF SMOKE FROM AN ELEVATED SOURCE UNDER VARYING CONDITIONS OF ATMOSPHERIC STABILITY

Chapter II—continued

Part 3—The Vegetation of Western Australia⁽¹⁾

With an Account of the Family Proteaceae

Contributed by P. G. Wilson
(*Western Australian Herbarium, Department of Agriculture*)

THE FLORA OF WESTERN AUSTRALIA

The State of Western Australia occupies about one-third of the land area of the continent and its flora contains approximately half of the total number of vascular plant species. It consists of about 6,500 flowering plants (angiosperms), 15 gymnosperms (*e.g.* cycads and conifers) and 50 ferns. The families of flowering plants which predominate in number of species in Western Australia are those which also predominate in the other States, *e.g.* the Myrtaceae, Leguminosae, Proteaceae, and Epacridaceae. None of the larger families is restricted in its distribution to Australia although several, such as the Styliaceae, Goodeniaceae and Epacridaceae, are only poorly represented elsewhere. Below the level of the family there are large groups which are endemic to Australia and it is often these which give the individuality to the Western Australian vegetation. Examples are the Chloanthoideae (Verbenaceae), Prostantheroideae (Labiatae), Persoonieae and Banksieae (Proteaceae), and the Epacrideae (Epacridaceae). All these groups are Australia-wide in distribution and, except for five small families, endemism in Western Australia is at the genus and species level only.

The distribution of species is of course dependent on the past tectonic and climatic history of the continent, as well as on present-day climatic and edaphic (soil condition) factors, and a knowledge of this history contributes to an understanding of the present-day plant geography.

It is generally accepted that in the Palaeozoic era Australia was united with the continents of southern Africa, South America and Antarctica into a common land-mass known as Gondwana. During this period the countries had a common flora exemplified by the *Glossopteris* elements (which were fern-like plants) but they lacked any flowering-plant ancestors. The break-up of the Gondwana land-mass began during the Jurassic era, also before the emergence of flowering plants in Australia. Thus, if this is correct, any present-day relationship between the floras of the southern continents must be due to causes other than that of a direct land connection in the past.

Following the break-up of Gondwana and the dispersal of the southern continents, it is thought that Australia came into contact in the north-east with a continent made up of New Guinea and a land which, in part at least, now lies beneath the ocean in the Coral Sea zone. It was presumably from this continent that, towards the end of the Cretaceous period, the early flowering plants and conifers entered Australia.

The flora of the early Tertiary era consisted partly of plants now associated with the New Guinea rain forests (the cinnamomum flora), partly of an apparently cool temperate assemblage, and partly of the typical Australian element. In the first category were found such broad-leaved genera as *Cinnamomum* and *Tristania*; in the second, the genera *Dacrydium*, *Podocarpus*, *Araucaria*, *Nothofagus*, and *Phyllocladus*; and in the third, *Banksia*, *Eucalyptus*, *Callitris* and *Casuarina*.

⁽¹⁾ See *Appendix* for reference to additional information in earlier issues of the Year Book.

It is possible that a change from an equable climate to a markedly seasonal one in the middle Tertiary period caused certain genera to die out, to be restricted to refuges or to survive only in southern moist regions. In Western Australia the cinnamomum element was largely eliminated while the cool-temperate assemblage was much reduced. The genus *Nothofagus*, for instance, is now extinct in this State, while of *Podocarpus* only one species remains and this is restricted to the forests of the South-West. In contrast, the Australian-element diversified and adapted itself to the varied climatic conditions and to the impoverished soil which is general throughout Western Australia. It also gave rise to a flora resistant to fire and in some ways apparently, adapted to it. An example of this adaption is the ability of some eucalypts to regenerate from their epicormic buds or from their lignotubers. Other adaptations are seen in the woody fruits of some Proteaceae which release their seeds after burning, and in the stimulus fire has on the germination of seeds which are lying dormant in the soil.

During the later period of diversification the south-west region of Western Australia was probably effectively isolated from the east by a shallow sea which occupied the present Nullarbor Plain, while the arid interior also restricted transcontinental movement of species. The plants in this south-west district were therefore able to evolve in semi-isolation and this they did to produce a flora rich in both number of species and in percentage of endemics.

The families which have been most successful in the South-West as exemplified by both number of species and size of populations, are those which, as mentioned above, flourish over a large part of Western Australia, and also in the other States. Within these families, however, the genera are frequently endemic to the South-West Botanical Province, an area which extends from Shark Bay in the north to Israelite Bay in the south, and bounded inland approximately by the ten-inch isohyet. In the family Proteaceae the genera *Dryandra*, *Stirlingia*, *Synaphea* and *Franklandia* are endemic. In the Myrtaceae the genera *Conothamnus*, *Eremaea*, *Phymatocarpus* and *Regelia* are also limited to this region.

At the species level the endemism is even more marked and it is estimated that about 75 per cent of the species in the South-West Botanical Province are found nowhere else.

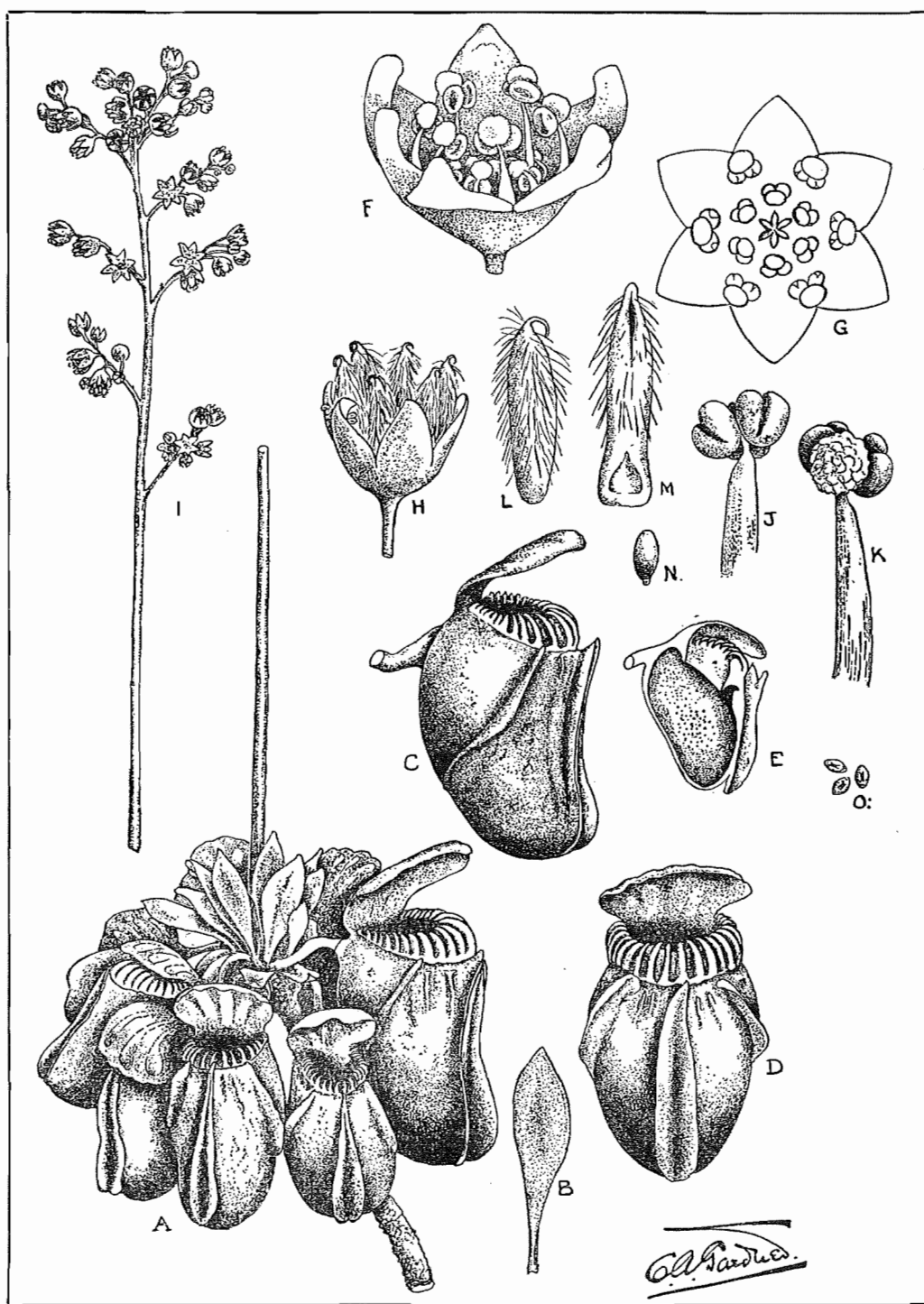
The five families which are endemic to Western Australia are also limited (or almost limited) in their distribution to the South-West Province. These are Cephalotaceae, Eremosynaceae, Emblingiaceae, Ecdeiocoleaceae, and Anarthriaceae. The first four families are monotypic (they have only one genus each with one species), while the last is monogeneric but with several species. *Cephalotus*, the Albany Pitcher Plant, is the only one of these endemics which is at all widely known. Its fame rests in its flask-shaped leaves with lids, which it possesses in addition to normal foliage leaves. The species is found in boggy, mineral-deficient situations, where the pitchers act as traps for insects, the flesh of which is absorbed and presumably provides the plant with additional nitrogen.

The genus *Eremosyne* is a low herb with insignificant flowers; it is known from only a small area in the Karri forests. Although considered to be distinct, both *Eremosyne* and *Cephalotus* are related to the large and widespread family Saxifragaceae, and presumably are segregates from the same ancestral group.

The only species in the Emblingiaceae, *Emblingia calceoliflora*, is a prostrate plant with small flowers. It is probably related to the *Polygala* family.

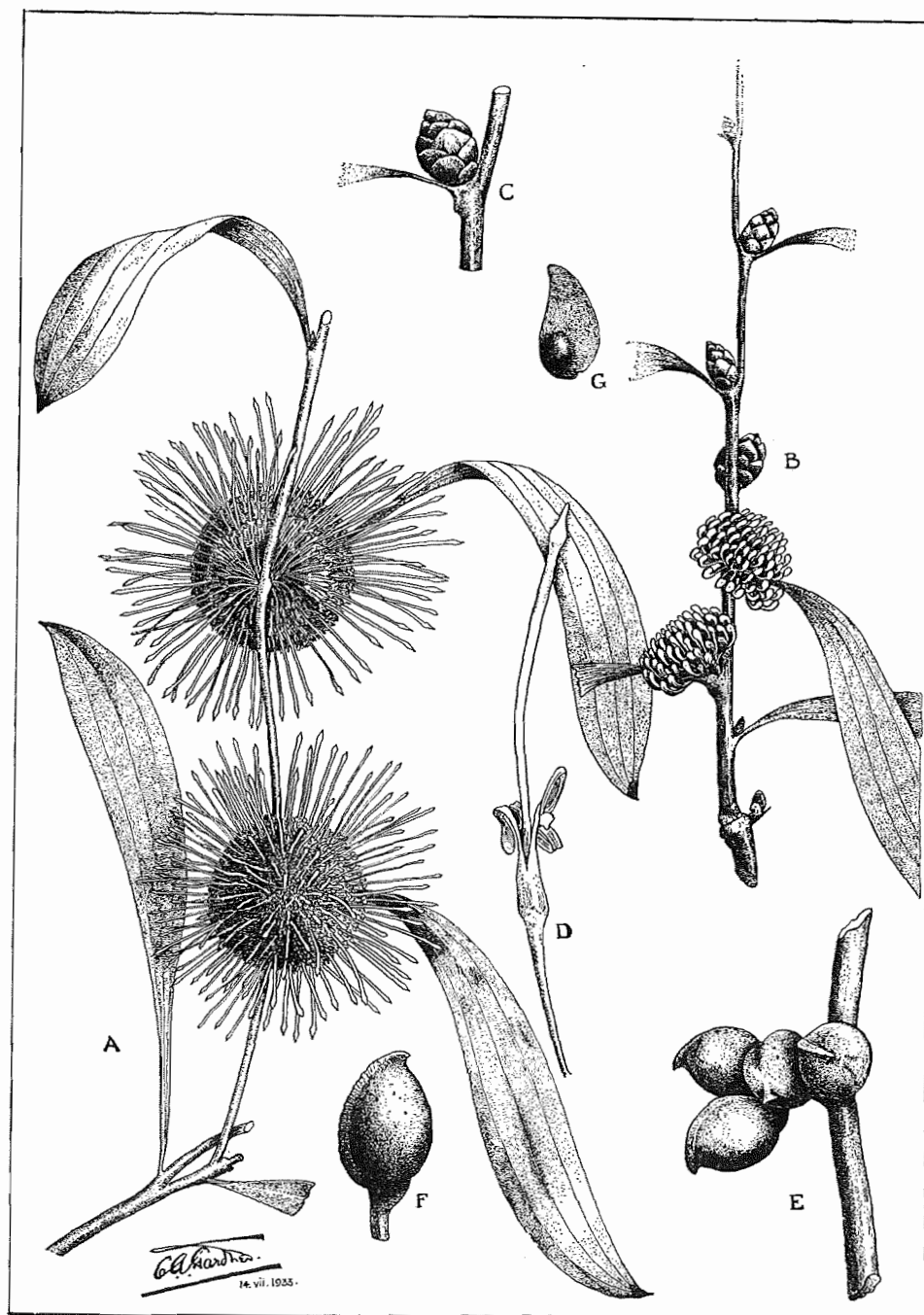
The species in the families Anarthriaceae and Ecdeiocoleaceae are all plants of the heaths, and in habit resemble the 'rushes' and sedges of the families Restionaceae and Cyperaceae to which they are undoubtedly related.

While the initial isolation of the flora (with its consequent diversification) of the South-West Province was due to tectonic, and secondarily climatic developments, it is likely that edaphic factors now also prevent the movement of species, for the soils of the Province are, on the whole, extremely deficient in those minerals required by most plants for normal growth. To this deficiency the native plants are adapted and it is in the areas of great deficiency that the flora exhibits in its heath plants some of its greatest diversity and display of colour.



THE PITCHER PLANT
(*Cephalotus follicularis*)

A, B, C, D and E—Plant and details of leaves (pitchers); F to M—Details of floral structure; N and O—Seeds.



PINCUSHION HAKEA
(*Hakea laurina* R.Br.)

A—Flowering branchlet; B—Branchlet with buds, the upper still enclosed in bracts, the lower with the bracts fallen; C—Bract-covered bud; D—A single flower; E—Fruits; F—A single fruit; G—A seed.

THE FAMILY PROTEACEAE IN WESTERN AUSTRALIA (1)

The family Proteaceae is one of principally temperate distribution in the southern hemisphere. Of over 1,400 species in more than sixty genera, the greatest concentrations are in Australia (over 750 species) and South Africa (400), with lesser numbers in central and South America (90), the islands east of New Guinea (80) and New Caledonia (45). There are a few species in south-east Asia, New Guinea, Fiji and Samoa, New Zealand, the New Hebrides, and the central African highlands.

While there is an obvious link with South Africa in the great development of the Proteaceae, the separation of the two continents must have occurred early in the family's evolution. There are two sub-families, the Persoonioideae and the Grevilleoideae. The Persoonioideae are well represented in both South Africa and Australia, the only species elsewhere being a *Persoonia* in New Zealand. The more diverse Grevilleoideae are almost absent from South Africa, highly developed in Australia and are present in the other countries listed above. The Persoonioideae are the more primitive sub-family, and hence South Africa must have separated from Australia soon after the Grevilleoideae appeared.

Within Australia, over 500 of the 750 species occur in Western Australia—the majority of them endemic in the South-West Province. They are spread among sixteen genera ranging in numbers from *Grevillea* with over 150 species down to several with two species, e.g. *Franklandia*. Four genera are endemic in the South-West Province—*Dryandra* (55 + species), *Synaphea* (10), *Stirlingia* (4), and *Franklandia* (2).

Proteaceae may be found in most parts of Western Australia but are rare in certain habitats, e.g. on the coast, in saline areas and in the desert. So far only a dozen species have been recorded in the desert regions. A higher number occurs in the tropical north and the North-West, mostly species of *Grevillea* and *Hakea*. The genus *Stenocarpus* in Western Australia is found only in the Kimberleys. By far the greatest concentration of the family is in the South-West Province.

Besides the four endemic genera, the Western Australian species of eight other genera are also endemic in or near the South-West Province—*Banksia*, *Conospermum*, *Isopogon*, *Lambertia*, *Persoonia*, *Petrophile*, *Strangea*, and *Xylomelum*. Only one of seventeen *Adenanthos* species is non-endemic (also in South Australia) while over 100 of the 150 *Grevilleas* and seventy-five of some ninety *Hakeas* are endemic here. Thus approximately 450 of over 500 species of Proteaceae in Western Australia are restricted to the South-West Province. This high degree of endemism is typical of the South-Western flora as a whole.

Morphological diversity is a feature of this family. Although all are perennials, they range in Western Australia from tall trees (*Banksia littoralis* reaches 20 metres) to prostrate shrubs. Among the latter are the curious prostrate *Banksias*, one of which (*B. repens*) even has underground creeping stems so that the leaves and flowers appear to be separated. Twiners are unknown in the family, but several species in Western Australia are trailing plants, e.g. *Grevillea nudiflora* and *Adenanthos apiculata*.

Adaption to fire is reflected in the structure of the stems and rootstocks of the Proteaceae. Some species are killed by fire and regenerate from seed, while others have the foliage and smaller branches killed but then produce new growth from the main stock. This may be on above-ground stems or an underground lignotuber. The particular adaption is usually constant for any species and is a useful taxonomic character. It is intriguing that in species which regenerate from the old stock, seed-set is usually poor while in species killed by fire, seed-set is substantial. Some of the latter species are quick-growing and relatively short-lived, flowering profusely for a few years after a fire and then becoming crowded out by slower-growing but longer-lived species, to survive as seed in the soil until the next fire. Such are certain species of *Conospermum* (Smokebush).

Leaf variety is extraordinary and often occurs on one plant. Besides diversity between species, the seedling leaves are often quite different from the adult ones, e.g. in *Synaphea*. *Hakea trifurcata* even has two leaf-types on the mature plants—flat, obovate ones and terete ones, the latter being simple or divided. Another *Hakea* is unique in being the only native plant in Western Australia to have variegated leaves. *Hakea victoriae* has oblong, undulate, prickly-toothed, juvenile leaves which are all green, but the adult

(1) Contributed by A. S. George.

leaves are broadly rounded, concave and sharply-toothed, the upper half green and the lower half coloured. In the first year the colour is cream, but it subsequently deepens through orange to red. The leaves last for about five years and the plants form striking columns among the heath of their south coastal habitat.

There is a wide range of inflorescence types, from solitary, axillary flowers to spikes, heads or racemes, the latter often paniculate. Some species are cauliflorous. Especially in *Banksia* and *Dryandra* the large inflorescences superficially resemble large single blooms but, in fact, they contain many flowers—in the case of some *Banksias*, several thousand per spike. The perianth structure is basically similar in all genera but is actinomorphic in some species and strongly zygomorphic in others. The ovary probably shows the greatest diversity in the floral morphology and it is the basis for the division of the family into sub-families and tribes. A curious development is seen in the form of the style. Although the apex is usually variously expanded or modified into an apparent stigma, only a very small area, usually a groove, is stigmatic. The function of the style end in most cases is to receive pollen from the anthers before the flower opens and then to present it to the pollinator. The stigmatic area becomes receptive later, so that self-pollination is avoided. While this occurs in many genera, in *Synaphea* the pollen is mechanically ejected. The stigma forms a door, held under tension, across the throat of the freshly open flower, and when touched flicks back while at the same time the anthers eject the pollen.

However, pollination in the family is still largely an unexplored field. Some species are known to be bird or insect-pollinated, while small marsupials visit some inflorescences, e.g. of *Banksia* species. Some showy species have prominent inflorescences, brightly coloured to attract birds and insects, but others have them concealed within the bush, e.g. *Banksia baueri*, *Conospermum petiolare* and *Strangea cynanchicarpa*. Others are prostrate species with the inflorescences on or close to the ground, e.g. *Dryandra nivea* and *Grevillea dryandroides*. It is possible that these are pollinated by small marsupials.

The attraction for the pollinator is not always apparent. With showy flowers, colour is probably important, and most colours are to be found in the family. Red, orange, yellow, pink and white are common colours, but browns and greens also occur. Blue and mauve are perhaps less frequent in Western Australia than in some other families, but several *Conospermum* species have bright blue flowers, while *Hakea lehmanniana* also is usually pale blue.

Scent is a lure in many species. It is often associated with nectar production which is quite heavy in some instances, e.g. several *Banksias*. Such flowers may have a sickly-sweet perfume, and a few are quite foetid, e.g. *Grevillea leucopteris*, which is a white-flowered species of the northern sandheaths, and the red-flowered *Hakea rhombales* of the desert. Other Proteaceae have a delicate sweet perfume, while a strong vanilla-like odour is produced by *Franklandia triaristata*.

The most fascinating variety of all is probably that of the fruit which assumes a multitude of forms in the different genera. In the Persoonioideae it is an indehiscent one-seeded nut or drupe. Seven of the eight Western Australian genera in this sub-family have dry nuts of various forms—top-shaped or barrel-like, often flattened. An extraordinary fruit is that of *Franklandia triaristata* in which the narrow, cylindrical nut is surmounted by a long, plumose column which itself is produced into three long awns, the whole fruit some fifteen centimetres long. The drupe of *Persoonia* has a very hard endocarp about the seed and is surrounded by a succulent exocarp. This is the only genus in Western Australia with a succulent fruit.

The Western Australian species of the Grevilleoideae have dry follicles which mostly open regularly to release two seeds. Only the northern *Stenocarpus* has more ovules (6-14). The follicles in *Banksia*, *Dryandra*, *Hakea*, *Lambertia* and *Xylomelum* become woody and usually persist unopened on the plant until their removal or until the death of the plant. These woody follicles require up to a year to reach maturity. In some species they have adapted to fire to the extent that it is essential for the opening of the fruit; even the normal death of a branch or of the whole plant will not cause them to open. A fire will do so immediately.

In *Grevillea*, and *Lambertia* the follicles are coriaceous but not woody, and usually open as soon as the seeds are mature, this usually taking only a few months.

In most of our Proteaceae, seed-set is very poor when compared with the number of flowers. The extreme cases are some *Banksia* species in which the spikes may contain up to 2,000 flowers but only 10-20 follicles are produced. In fact many spikes set no fruit at all. In some genera the seed-set may appear to be substantial, but examination of the fruit shows that many contain no viable seed, e.g. in *Conospermum*.

Economically the Proteaceae are of limited value in Western Australia. Few species are trees, but several *Banksias* have attractively-grained timber and find a limited use in furniture construction. More important is the use of many species in honey production. Both nectar and pollen are produced, especially by species of *Adenanthos*, *Banksia*, *Dryandra*, *Grevillea*, *Hakea* and *Lambertia*, and major flows are produced by a few species.

The aesthetic factor is also important. The family provides a large proportion of the colourful wildflowers for which the South-West is famous and which many tourists travel to see in the spring. Further, the flowers (and sometimes the fruit) of many species, especially of *Banksia* and *Dryandra*, are cut for sale either fresh or dried on the local, interstate and overseas markets. Cultivation of Proteaceae as garden subjects is also increasing, although many are difficult to grow.

VEGETATION PROVINCES

It has been said that of all the factors which determine and control the vegetation of the earth, the climatic factor is the most important, and rainfall and temperature are the most important of the climatic elements. In Western Australia there are three distinct climatic regions. These are the tropical north with a short, hot, rainy period, the temperate south with a rainy period occurring in the coldest months, and the arid interior which has no regular rainfall pattern. The flora is remarkably different within these three areas which for this reason have been used as natural divisions of the flora. Diels referred to them as the Northern, the South-West and the Ereman Provinces. A map by C. A. Gardner showing the boundaries of the three Vegetation Provinces of Western Australia appears on page 56.

The description of the climatic and vegetative characteristics of these Provinces and their Formations contained in the following sections is also by the late C. A. Gardner, formerly Government Botanist of Western Australia.

Climatic Characteristics

The *Northern Province* extends over the Kimberley Division to some few miles southward from the Fitzroy River, thence contracting into a narrow coastal isthmus in the vicinity of the Eighty Mile Beach, and expanding southward to include the De Grey River and the greater part of the Fortescue system. It is the area which, lying north of the Tropic of Capricorn, receives its rain entirely in the summer months, with a seasonal rainfall during the four wettest months ranging from about seven inches in its southern portions to over forty inches in parts of the Kimberley Division, and has an annual mean maximum temperature of 32.2°C or over, although during the growing season temperatures may be even higher. The season from the commencement of April until the end of October is relatively rainless.

The *South-West Province* extends from the southern end of Shark Bay in the north to Israelite Bay in the south. On the western and southern sides it is bounded by the ocean, while its inland boundary passes close to Mullewa, Morawa, Koorda, Bencubbin, Burracoppin, Hyden, Ravensthorpe and Grass Patch. It is pre-eminently the winter rainfall province which receives its maximum rainfall from May to August inclusive and, with the exception of the southern portion, experiences a seasonal drought extending from November to March or April. The average maximum temperature is less than 26.7°C with much lower temperatures during the growing season.

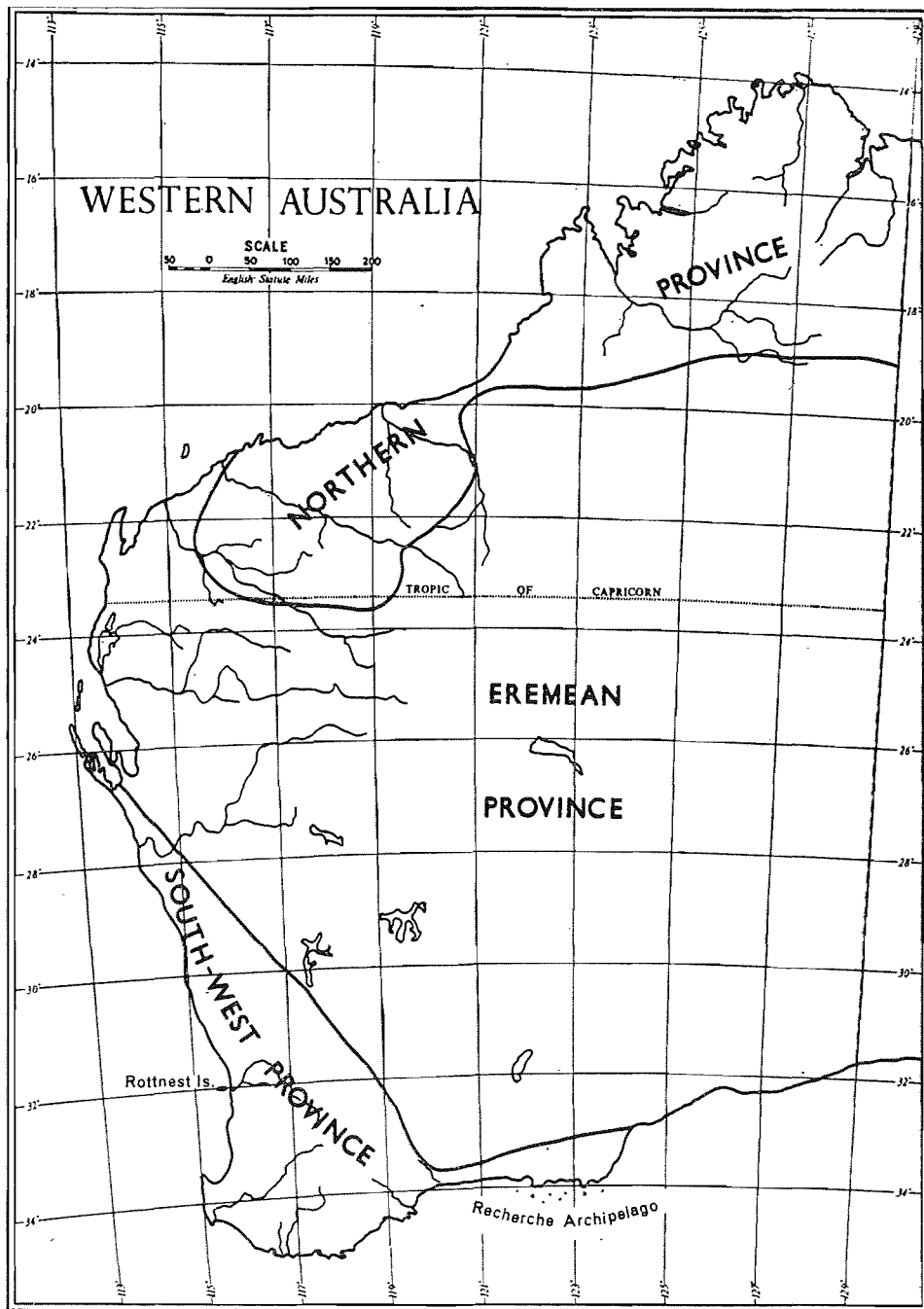
The *Eremean Province* lies between the Northern and the South-West Provinces, and occupies approximately two-thirds of the total area of the State of Western Australia. It is intermediate in character between the other two; its rainfall is received either from extensions of summer rainfall southward (and this makes up the greater portion, especially such rainfall as is received from tropical hurricanes during the late summer months), or in the south from extensions of the winter systems, while, rarely, a general rainfall may occur throughout.

Vegetative Characteristics

The *Northern Province* is essentially the savannah-steppe Province in that a herbaceous ground-covering mainly composed of grasses occurs. This varies from the rich grasslands of the Kimberley to the harsh spinifex 'steppe' of the country southward from the Fitzroy, broken only by the alluvial grassland plains of the De Grey and Fortescue districts, especially the Roebourne Plains. Scrubland as such is unknown, except to a very limited extent in the rough sandstone range country of north-west Kimberley. Forests as such do not occur and Mulga too is absent. Floristically the Province is characterised by the part played by the 'Indo-Melanesian Element' in its constitution. In places this element may predominate to the extent that amongst the trees *Eucalyptus* plays a secondary role, and deciduous trees are prominent. The grotesque Baobab is common, together with various soft-wooded trees, while the herbaceous growth is rich in members of the *Hibiscus* family and several others. With the exception of the river bank and swamp formations, most herbaceous growth is either dead or resting during the winter months.

The *South-West Province*, on the other hand, is characterised by a total absence of the Indo-Melanesian influence, and its flora bears a distinct southern or 'Antarctic' impress. Trees and shrubs predominate with a marked diminution of grasses, and there is no true grassland. The herbaceous species are of winter growth, and the plants remain dormant during the dry summer months, especially the species of *Acacia* and *Casuarinaceae*. The *Proteaceae*, which assume a minor role in the North, here hold sway, as do the *Myrtaceae* and *Leguminosae*. The principal formations are forest woodland and scrubland, with extensive tracts of sand heath. Mulga and spinifex are absent and the various salt bushes either exist as inhabitants of the physiologically dry salt pans, or occur only marginally. There is a distinctive plant architecture among the woody plants in which the effect of the dry season is apparent.

The *Eremean Province* is again intermediate. Floristically it is characterised by the 'Australian Element', recruited from northern and southern influences, and those hardy species which have arisen in response to an adverse environment. Notably there is an increase in the spacing of plants due to root competition between neighbours. The result is a series of 'open formations'; Mulga bush, consisting of leafless species of *Acacia* with resinous or stiff leaf-like phyllodes; a predominance among the shrubs of species of *Acacia*, *Cassia* and the attractive species of *Eremophila*, notable for the size and colour of their blossoms. The Northern influence is expressed most strongly by the Spinifex (*Triodia*) which is the dominant tussocky grass of the lighter and stony soils, while the Mulga occupies the more closely-grained soils, the true mulga (*Acacia aneura*) being restricted to hard-pan soils. The Southern Element is most strongly asserted in the loose red sand and around granite rocks, the former carrying those sand-loving species for which the South-West is famous (even the Blackboy extends into the heart of the Erema) while the species of the granite rocks owe their existence to an improvement in the water content of the soil in addition to the shelter and shade provided by declivities. In the northern portions of the Province we find, where watercourses provide permanent pools and moister conditions than elsewhere, an intrusion of the Northern Element, especially in the grasses and the herbaceous flora generally. Savannah and steppe occur in the north, Mulga and spinifex steppe occupy the middle areas, while in the south we have woodland formations, with some degree of heath development. The salt soils carry distinctive associations of salt-tolerant plants in which salt bushes are predominant, and this same formation occurs on the limestone soils of the Nullarbor Plain. Forests are absent.



VEGETATION PROVINCES OF WESTERN AUSTRALIA

(The map is after C. A. Gardner, 1942. Reproduced by courtesy of the University of Western Australia Press.)

VEGETATION FORMATIONS

Within the three large Vegetation Provinces plant species are grouped into associations which are basically dependent on soil type. The soil, within the limits of each rainfall zone, governs the amount of water available to the plants and influences the habit and character of the plant cover. Thus there are Forest Formations, Woodland Formations, Shrub Formations and many others.

The Forest Formations of the South-West

The Jarrah Forest. The most important of the forest formations of the South-West is that dominated by the Jarrah (*Eucalyptus marginata*), which reaches its greatest development in the lateritic soils from the Darling Scarp eastward to the twenty-inch isohyet, although it does occur also on the sandy coastal soils. Within the forest area Jarrah forms an almost pure stand, but along watercourses Blackbutt (*Eucalyptus patens*) is common, while Marri (*Eucalyptus calophylla*) is almost always present where sandy soils occur. In the richer soils of the valleys, Wandoo (*Eucalyptus redunca* var. *elata*) and Powder Bark Wandoo (*Eucalyptus accedens*) commonly occur, the latter being usually associated with granite outcrops. The understorey of the Jarrah forest consists principally of *Banksia* and the related *Persoonia*, *Hakea* and *Dryandra*, together with the Christmas Tree (*Nuytsia floribunda*), Sheoak (*Casuarina fraserana*), Blackboy (*Xanthorrhoea preissii*) and *Zamia* (*Macrozamia riedlei*) in varying associations.

The Karri Forest. To the south of the Jarrah forest, in an area where the rainfall is heavier and more evenly distributed throughout the year, the Karri (*Eucalyptus diversicolor*) forms almost pure stands in certain light types of soil, mainly on the hillsides. Associated with it in the valleys is Bullich (*Eucalyptus megacarpa*), a tree which closely resembles Karri, while Jarrah and Marri occur where there are gravelly or sandy soils. The understorey consists of the Karri Sheoak (*Casuarina decussata*), Peppermint (*Agonis flexuosa*), Warren River Cedar (*Agonis juniperina*), Bull Banksia (*Banksia grandis*) and River Banksia (*Banksia verticillata*). The shrubby components are Karri Wattle (*Acacia pentadenia*) and Hazel (*Trymalium spathulatum*) with *Hovea*, *Crowea* and *Boronia* providing masses of colour in the flowering season.

The Tingle Forest. Around the lower reaches of the Frankland River, the Karri trees are largely replaced by Red Tingle (*Eucalyptus jacksonii*) occurring mainly on the slopes and tops of hills, and Yellow Tingle (*Eucalyptus guilfoylei*) found mainly in the valleys and low situations generally. The associated vegetation is almost identical with that of the Karri forest.

The Wandoo Forest. There are few large areas of true Wandoo forest in the South-West, although the tree is widely distributed in the country to the north and east of the Jarrah belt. Where the Wandoo penetrates into the Jarrah forest it is associated with an understorey which, though closely resembling that of the Jarrah forest, lacks *Persoonia*, Sheoak and Christmas Tree. In the more open stands to the east, however, it is associated with a much reduced shrubby undergrowth, and frequently with Jam (*Acacia acuminata*). Within the Wandoo forest, the Mallet species *Eucalyptus astringens* and *E. gardneri* form dense associations on stony hillsides, while in the southern portion of the forest the Swamp Yate (*Eucalyptus occidentalis*) occurs freely on the low-lying country.

The Tuart Forest. The Tuart (*Eucalyptus gomphocephala*) occurs in a typical forest formation between Ludlow and Busselton where it is associated with Peppermint, species of *Banksia* and a large number of herbaceous species. The formation extends northward as far as the Hill River and throughout its occurrence is restricted to limestone soils. To the north of Ludlow the forest gradually merges into a sparse woodland formation with an abundance of shrubby undergrowth and relatively few herbaceous species.

Woodland Formations

The Woodland formations differ from the forests of the South-West in being less uniform. Whereas the forest is invariably dominated by a single species, the woodland on the other hand consists of a series of co-dominant species which occupy relatively small

areas in the intricate pattern which makes up the mosaic of the Woodland formation. The principal trees are the Salmon Gum (*Eucalyptus salmonophloia*), Gimlet (*Eucalyptus salubris*), Morrel (*Eucalyptus longicornis*) and Yorrel (*Eucalyptus gracilis*). Many other species are locally dominant and the undergrowth consists of species of *Acacia*, *Grevillea*, *Hakea* and mallee forms of *Eucalyptus*. This formation is chiefly South-Western, but it extends also into the Ereman Province where, although the tree species remain fairly constant, the undergrowth changes in character with an increasing number of the species of Poverty Bush (*Eremophila*), Saltbushes (*Atriplex*) and Bluebushes (*Kochia*).

Shrub Formations

The Mallee Eucalypts. The mallee form of *Eucalyptus* is found in many districts from the west coast to the South Australian border, and it is absent only from the forest areas of the South-West. Mallee thickets reach their greatest development in the alluvial soils, but they occur in almost any type of soil. In the lighter soils they frequently occur in association with other shrubs, particularly tea tree which at times actually dominates in a sandy habitat.

The Mulga Bush. The Mulga bush occupies a large part of the Ereman Province. This formation extends almost without interruption from the west coast between Onslow and the Wooramel River eastward as far as New South Wales and, although its species may change, it maintains its character and identity throughout. The species of *Acacia* referred to as Mulga have a greyish resinous foliage and it is the dominance of these species, more than anything else, which gives the Mulga bush its character. Component shrubs are rather widely spaced. Another characteristic of the formation is its differential response to rain, a winter precipitation producing an immediate germination of vast numbers of annual and perennial herbs and shrubs, while summer rains promote a vigorous growth of grasses.

The Sand Heath. It is in the sand heath formation that the flora of the State displays the greatest number and diversity of its species, as well as the greatest development of colourful and interesting endemic forms. The most extensive sandplains are found at the northern and eastern extremities of the South-West Province, between Northampton and the Murchison River and from Ravensthorpe to Israelite Bay. They occur also on the eastern fringes of the South-West Province, and in the Ereman Province where important areas occur at Comet Vale and to the east and south of Southern Cross.

Savannah and Steppe Formations

Except for a weak development in Jam and York Gum (*Eucalyptus loxophleba*) country in the South-West, savannah and steppe formations are restricted to the Northern and Ereman Provinces where there are the necessary climatic conditions of summer rains alternating with a dry cool winter. On river flats the dominant species is the Coolabah (*Eucalyptus microtheca*) with a grass element consisting of species of *Sorghum* and Citronella Grass (*Cymbopogon* spp.). In the sandier soils Spinifex (*Triodia* spp.) is the dominant grass, while the tree layer consists of a number of bloodwoods and the Micum tree (*Eucalyptus brevifolia*). On the basalt soils the Grey Box (*Eucalyptus tectifica*) is associated with certain cabbage gums and Kangaroo grass (*Themeda australis*). An interesting type of open savannah occurs in coastal country between the De Grey and Fitzroy Rivers and is referred to as Pindan. In this formation, several species of *Acacia* are associated with a large number of grasses both annual and perennial although in recent years the introduced Buffel Grass (*Cenchrus ciliaris*) is dominating the grass cover.

Southward from the Fitzroy River is the large area of Spinifex steppe dominated by *Triodia*, where very few trees occur. The shrubs are mainly species of *Acacia* and *Cassia*. This formation gradually merges into the more open desert country of the interior, an area which is only now becoming known botanically.

Chapter II—continued

Part 4—The Fauna of Western Australia

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DISTRIBUTION

Terrestrial Vertebrates

An observer who looks carefully at the fauna of a large land mass like the Australian continent will soon discover that its animals are not distributed uniformly throughout it. He will find that groups of species which are characteristic of some places are missing from others. This is because the distribution of animals results both from their response to the physical (*i.e.* ecological) conditions of their environment (and these are not uniform from place to place), and from their past histories. For example, the presence of routes along which a species could have moved in the past, and of barriers which would have made its movement from one place to another impossible, decide whether any species could have reached a particular locality by today. But whether it has persisted there until today depends upon local conditions having been suitable for it.

The relationship between the distribution of a species and the character of its environment may be demonstrated dramatically and most easily by comparing the distribution of animals with that of climate, and in particular with its components of temperature, rainfall and the time of the year at which rain falls. In Western Australia many species lie within one or other of the boundaries of two rather different climatic regions. These are the South-West with its regular and plentiful rainfall during cold winters, and the Kimberley with regular, plentiful rainfall during hot summers. The remainder of the State receives intermittent and unreliable rainfall in quantities which vary widely; some parts of this area (*e.g.* the Pilbara) receive their small amount of rain principally in the summer and other parts (*e.g.* the Nullarbor) in the winter.

An analysis of most of the Western Australian groups of vertebrate animals shows that they can be referred to three faunal assemblages characteristic of these climatic regions. These assemblages are called *faunas* and have been named by zoogeographers *Bassian* which, in this State, is the fauna characteristic of the South-West; *Torresian* which, in this State, is characteristic of the Kimberley; and *Eyrean* which is the fauna which occupies the land between. While the composition of a fauna is, generally speaking, characteristic of the area in which it occurs, the occurrence of a particular species in a fauna does not mean that it will not be found in another because each of the faunas has several elements which are sufficiently wide in their requirements for them to occur as 'foreigners' in the faunas of neighbouring regions. Examples of these are the species with predominantly Torresian populations (and apparently histories of origin) which are found today in the otherwise Eyrean fauna of the Pilbara district of the North-West; and various Eyrean species which occur in the Bassian fauna of the South-West.

Among the birds the sharpest faunal break is between the Torresian fauna of the Kimberley division and the Eyrean fauna of the Pilbara. The Kimberley is the headquarters in Western Australia of the Scrub Fowl (*Megapodius freycinet*), the Fruit Pigeons (Ptilinopinae), Lorikeets (*Trichoglossus* and *Psitteuteles*), the White Cockatoo (*Cacatua galerita*) and most of the Grass Finches. The Torresian species which penetrate further southwards include the Brolga (normally only to Onslow), White-breasted Wood Swallow (to Shark Bay), and the Brown Honeyeater (right through to the South-West).

Among mammals there seem to be a few truly Torresian species in Western Australia. Examples would be the Fruit Bats or Flying Foxes (*Pteropus* and *Macroglossus*), the Little Rock Wallaby (*Peradorcas concinna*), the Jungle or River Wallaby (*Macropus agilis*) and the Antelope Kangaroo (*Macropus antilopinus*). On the whole most of the mammal species which occur in the Kimberley seem to be characteristic of that part of the Eyrean fauna inhabiting the country which receives intermittent rainfall during the summer.

Even among birds, the boundary between the majority of the Eyrean species and the bulk of the Bassian species is less well defined than that which separates Eyrean and Torresian faunas as there is a good deal of overlapping. For example, the line which separates the woodland eucalypts and the mulga, the so-called 'mulga-eucalypt line', is the extreme limit of most Bassian species, though many do not range inland beyond a line connecting Geraldton, Moora, Northam and the Stirling Range. The mulga-eucalypt line separates, to quote an example, the main distributions of the Grey Kangaroo (Bassian) and the Red Kangaroo (Eyrean). This line is the northern limit of other well known Bassian species such as the Red Wattle Bird.

The South-West of the State has representatives of many well known Bassian species also found in south-eastern Australia. These include among birds, the Brush Bronzewing, White-tailed Black Cockatoo, Western Rosella, Scarlet Robin, Yellow Robin, Southern Emu-Wren, Silvereye, White-naped Honeyeater, Western Spinebill, New Holland Honeyeater and Red-eared Firetail. Among mammals there are the Pigmy Possum, the Wambenger, the Grey Kangaroo, the Tammar Wallaby, the Brush Possum and various dunnarts (marsupial mice, *Sminthopsis*). Among frogs there are various *Crinia* and *Heleioporus inornatus* and *australiacus*; and fishes such as *Galaxias* and *Nannoperca*. However, there has been an extensive intermingling of Eyrean and Bassian elements in the South-West on a scale not paralleled in south-eastern Australia. In the South-West we have a blend of faunas in the sclerophyll forests which, though essentially Bassian in character, contain such Eyrean intrusives as the Purple-crowned Lorikeet, the Twentyeight Parrot, the Rufous Tree-creeper, the Western Warbler, the Banded Blue Wren and the Red-tipped Diamond-bird.

It must be recognised also that the distribution of animals that we see today may be a very recent pattern, and subject to continual fluctuation. Studies of fossil pollen in the South-West suggest there have been fluctuations in the relative abundance of Jarrah, Marri and Karri trees over the last few thousand years. Even more marked fluctuations in vegetation may have been produced by climatic changes accompanying glaciation and deglaciation in high latitudes and altitudes over the past 2 million years. Marked changes in vegetation would usually be accompanied by changes in fauna. We know that the Marsupial Wolf or Tiger (*Thylacinus*), the Koala (*Phascolarctos*) and other marsupials, some of them now extinct throughout their ranges in Australia, once lived in the South-West, and it is possible that climatic changes were responsible for their vanishing from that area of Western Australia.

Climatic alterations, on a minor scale, are constantly going on. In the past half-century, or longer, there has been a considerable change in northern Europe, Asia and America, an amelioration in some parts and a drying-up in others, with widespread effects on the distribution of animals. Something similar appears to have been taking place in Western Australia. Many dry-country bird species, of the Eyrean faunal assemblage, have made notable extensions of range into the south-west corner. These include the Galah, Little Corella, Budgerygah, Smoker Parrot, Crested Pigeon, Black-faced Woodswallow, Crested Bell-bird, Blue-and-white Wren, Black-throated Butcher-bird and Little Crow. The records of local naturalists, who keep district lists of local birds and mammals over a period of years, are very useful sources of data for plotting these changes. Frequent Museum surveys will provide more positive information.

In some cases distribution changes due to natural causes may be masked or modified through the alterations of habitat due to settlement. These habitat changes act to the detriment of woodland birds but favour open-country species (like pipits and plovers).

Coastal Marine Fauna (1)

The nature of the coastal waters varies from the warm mangrove-lined mud flats of the north to the clean sandy bays and cool crystal-clear waters of the south. The types of coastal marine habitats depend on the range of tide, the exposure to oceanic swells, the sediments carried off the land by wind or river and some local biological activities such as reef coral or algal building. There is a gradual change in water temperature, salinity and other physical characteristics of the sea as one moves along the long Western Australian coastline of 7,000 kilometres; these changes reflect the nature of the adjacent water mass modified by local effects such as occur in large and small embayments, near river mouths or behind protecting headlands. The coastal waters may be divided into the following broad zones:

1. North: from the Western Australian-Northern Territory border to Cape Leveque with very broken coastline, a high tidal range, high runoff from well vegetated hinterland and no exposure to heavy oceanic swell.
2. North-north-west: from Cape Leveque to Cape Keraudren with eighty miles of low beach, a high tidal range, little regular runoff from desert sands which are blown into the sea by the 'South-East Trades'.
3. North-west: from Cape Keraudren to North West Cape with an indented coastline, moderate tidal range, irregular runoff from some mountains and desert sands.
4. West-north-west: from North West Cape to Kalbarri with some high cliffs, a deep embayment (Shark Bay), moderate tidal range, irregular low runoff from little vegetated desert hinterland and exposure to the south-west oceanic swell. A barrier coral reef, unique in Western Australia, runs southward from North West Cape for nearly 160 kilometres.
5. West-south-west: from Kalbarri to Cape Naturaliste with fairly smooth low white sandy coastline and some limestone headlands; rainfall moderate with little runoff from coastal sands, water clear; tidal range low, offshore coastal reefs give some protection to the coast from the south-west swell.
6. South-west: from Cape Naturaliste to Israelite Bay with broken headland and surf beach formations, high south-west swell exposure, low tidal range, many inlets and low-volume river discharges.
7. South-east: from Israelite Bay to the Western Australian-South Australian border with smooth coastal outline of beaches and some cliffs, modified exposure to south-west swell, low tidal range and low rainfall runoff.

Certain coastal marine areas are special in the sense that they represent either a transition (*i.e.* rapid change of character) between two adjacent zones or possess unique features found in such combinations nowhere else on the coast. Examples of such special places are the coastal waters in the Broome to Derby region, around North West Cape, in Exmouth Gulf, in Shark Bay, the Perth metropolitan beaches (including Cockburn Sound), around Cape Naturaliste and around Cape Leeuwin.

The islands and reefs off the coast are also regarded as special because of their marine faunal peculiarities; for example, the Houtman Abrolhos, the Monte Bellos, the Rowley Shoals, the North West Cape Barrier Reef and the Recherche Archipelago.

The marine fauna of the north coast is distinct from that of the south coast although a few species do occur in both regions. The northern fauna is regarded as part of the Indo-West Pacific fauna, and the southern fauna of Western Australia as part of the southern Australian fauna. Some species of both these faunas extend and overlap along the west coast and there are several species which are endemic to this region only. One of these is the Western Australian commercial rock lobster *Panulirus cygnus* and another is the Western Australian commercial jewfish *Glaucosoma hebraicum*.

Fauna of Inland Waters (2)

The inland waters are of many types and possess very varied faunas. They may be divided into four main ecological groupings: (1) the rivers of the Kimberley Division;

(1) Written in collaboration with Dr R. W. George. (2) Written in collaboration with Dr E. P. Hodgkin.

(2) the river systems of the North-West from the De Grey to the Murchison; (3) the streams, swamps, and lakes of the south-west corner; and (4) the temporary waters of the dry inland represented by two widely different habitats, (i) freshwater claypans and soaks (including man-made dams) and (ii) the salt lakes.

Marked seasonality characterises river flow in the Kimberley Division because of the alternation of regular summer rain with winter drought. The river pools and many isolated springs support an extensive fauna of fish, insects, molluscs and other animals, many of which show close affinities with the aquatic fauna of Asia and the Indo-Malay Archipelago.

The rivers of the North-West from the De Grey to the Murchison flow only intermittently, and between times of flood the fauna must survive in widely separated spring-fed pools in river beds. These pools, like those at Millstream Station on the Fortescue River, are often of striking beauty. Their fauna is relatively sparse as compared with the richer assemblages in the Kimberley rivers, the most conspicuous elements being a few fish species and a freshwater tortoise (*Chelodina steindachneri*) which is confined to the region.

The permanent hill streams of the South-West have a diverse arthropod fauna. Most of these are insects but, in addition, there are several species of freshwater crayfish in slower-running parts—Marron (*Cherax tenuimanus*) occur in permanent streams of deep water; Jilgie (*C. quinquecarinatus*) in shallow permanent water; Koonac (*C. preissi*) make burrows in the mud of swamps. A species of a closely related group, the so-called 'land-crabs' (*Engaewa*), has been recently discovered in the swamps of the South-West. The freshwater mussel *Westralunio carteri* is confined to the streams of the South-West. Most rivers stagnate and may become saline in summer; they are reduced to chains of large or small pools to which the fauna is restricted. The small transparent prawn *Palaeomonetes* is often abundant in these pools. Shallow permanent lakes and swamps near the coast also have a fairly varied insect fauna, among which certain species of dragonflies are particularly abundant; at times there are enormous numbers of *Daphnia* and related small crustaceans.

The inland freshwater claypans are characterised by an interesting ephemeral fauna, mainly of phyllopod Crustacea. The most conspicuous is the large shield shrimp (*Triops australiensis*) but a variety of fairy shrimps (Anostraca and Conchostraca) occur also. The eggs of these creatures survive for years in the dried mud and development is rapid when the claypans fill after occasional rains.

The most conspicuous animals in the waters of the salt lakes are the brine shrimps (*Artemia* and *Parartemia*), which at times build up to such high population densities as to attract large flocks of Banded Stilts, which breed only in certain of the inland salt lakes. The Salt Lake Snails *Coxiella* reach their greatest diversity and abundance in the South-West saline lakes.

THE COMPOSITION OF THE FAUNA

The fauna of Western Australia includes representatives of all major phyla of the Animal Kingdom and individuals range in size from the Blue Whale (*Balaenoptera musculus*), the largest mammal that has ever lived, to minute single-celled protozoa which cannot be seen without a microscope. No estimate can be made of the number of species, and probably the number of species of insects alone out-numbers all the rest by a comfortable margin. Here we have not attempted to describe all phyla. The vertebrates are given fairly full treatment because they are obvious and familiar animals to most of us. The insects (mostly those of economic importance) are dealt with in Part 5 of this Chapter, and the remaining phyla are treated in a few paragraphs which confine themselves to groups of interest.

THE VERTEBRATE FAUNA

Mammals

Unlike the birds and reptiles, wild mammals are not frequently seen in most parts of Western Australia. This is because most of the species are small and secretive and appear

only at night. However, there are exceptions and, as any traveller in inland and northern parts of the State can attest, kangaroos of one species or another can often be seen in large numbers during daylight hours.

Most species of mammals have distinct ecological preferences which allow them to be categorised into one or other of the three main faunal groups which are described earlier in this Part under the heading *Distribution*. For example, in the kangaroo family, the Tammar Wallaby (*Macropus eugenii*), the Quokka (*Setonix brachyurus*), and the Brush Wallaby (*Macropus irma*) are found only in the South-West or on certain isolated islands off the coast. Of these, the Brush Wallaby is closely related to the South Australian Toolache Wallaby (*Macropus greyi*) and the Tammar to the Flinders Island Wallaby and the now extinct St Peter Island Wallaby of South Australia. The most familiar kangaroo of the dry country with unreliable rainfall is the Red Kangaroo or Marloo (*Megaleia rufa*), while in the summer-rainfall country of the Kimberley Division we find such species as the Jungle Kangaroo or River Wallaby (*Macropus agilis*), the Little Rock Wallaby (*Peradorcas concinna*) and the Northern Nail-tailed Wallaby or Karrabul (*Onychogale unguifera*). In addition to the species which sort out in this convenient way, there are others which are widely distributed and in fact occur as members of all three faunal assemblages. The most familiar members of the family which do this are the Euro or Biggadda (*Macropus robustus*), the Boodie (*Bettongia lesueur*), and the Rock Wallaby (*Petrogale penicillata*). Of these, the Euro may still be found anywhere in suitable local habitats from the Kimberley to the South-West and inland across the South Australian border. At one time this was true also of the Boodie and the Rock Wallaby which, however, are today unfortunately absent from much of their former range.

So far, only the kangaroos have been mentioned but, in fact, representatives of all three major divisions of the mammals (*i.e.* monotremes, marsupials and placentals) occur in the State.

The egg-laying monotremes are represented by the Echidna (*Tachyglossus aculeata*), sometimes called Spiny Anteater or Porcupine. This curious and completely inoffensive animal is not uncommon in the country around Perth and it even appears on occasions in densely-settled suburban areas. In drier districts, its diggings, made in its search for insects, are familiar around rocky hills and breakaways.

Marsupials, or pouched mammals, occur in great variety in Western Australia. The kangaroos and wallabies, already mentioned, are the herbivorous members of the group. These animals are the Australian evolutionary equivalent of the antelopes, deer, and horses of the other continents and there is often an extraordinary similarity in structure between members of the kangaroo family and these other herbivores. These similarities extend even to such details as the physiology and shape of the stomach and other organs of digestion. The reproductive systems of marsupials and their physiology have also long been of great interest to biologists because they differ from those of other animals. For example, it is now known that in the Quokka, and some other wallabies, the adults mate again immediately after the birth of the 'joey'. The embryo which is the product of this second mating does not develop immediately but is held in a dormant state in the female system. However, if the first young joey is lost from the pouch, this dormant embryo immediately begins to develop and a second joey is produced after a minimum period of time.

In Western Australia the kangaroos and wallabies are all terrestrial (there are no tree kangaroos), and even their arboreal relatives, the phalangerids, are few in number as compared with other parts of Australia. The Brush Possums, the Pigmy Possums and the Ring-tails have Western Australian representatives, but the Koalas and the striped Possums are absent, and of the four species of flying possums of eastern Australia only one (*Petaurus breviceps*) occurs in Western Australia and that only in the Kimberley Division. Although the species of possums in Western Australia are few in number, there are some unique forms which are of great interest. One of these is the rare Scaly-tailed Possum (*Wyulda*) of the Kimberley; unlike other Australian possums this animal has a hairless scaly tail and only twelve specimens of it are known. There is also the curious and rarely-seen

Honey Possum (*Tarsipes*) of the South-West. Wombats are known to have occurred in Western Australia around the turn of the century and were thought to be extinct until a small colony was rediscovered in 1965 near Caiguna in the Eucla Division.

Although the large carnivorous marsupials no longer live in the State, the smaller representatives of this group are still fairly common. There are two separate species of native-cats, a southern species (*Dasyurus geoffroii*) and a northern one (*Dasyurus hallucatus*), as well as many species of smaller carnivorous and insectivorous forms. One of the smaller members of this family, the Dibbler (*Antechinus apicalis*), one of our least-known marsupials and last recorded in 1884, was rediscovered during 1967 at Cheyne Beach near Mount Manypeaks on the south coast.

The remaining group of marsupials is that commonly called the bandicoot family. One of these, the Pig-footed Bandicoot (*Chaeropus ecaudatus*) is probably the State's rarest mammal, but it once occurred in the Nullarbor region where its remains have recently been discovered in caves and two living specimens of it were collected by John Gilbert in 1841 some miles to the north-east of Northam. No confirmed record has been made of the species in Western Australia since then. On the other hand another species of bandicoot, the Quenda, or Short-nosed Bandicoot (*Isodon obesulus*), is one of the commonest of marsupials. Its scratchings are common in country gardens and the little animal is often run over and found dead on roads. It lives largely on insects, and being nocturnal it is seldom seen but it is nevertheless very common in many areas in the South-West.

The third main group of mammals is that of the higher mammals or placentals. Animals of this group occur in Western Australia in addition to the marsupials and the monotremes, and it always comes as something of a surprise to visitors (who generally have a strong preconception of Australia as a land in which all but introduced mammals and the Dingo are pouched mammals and monotremes) to learn that there are many species of Western Australian native placental mammals. In fact, if the seals, whales, and Dugong which occur around our coasts be counted, the species of native placental mammals outnumber the marsupial and monotreme species.

The composition of the mammal fauna is shown in the following table.

Kinds of wild mammals	Number of species occurring in Western Australia (a)	Kinds of wild mammals	Number of species occurring in Western Australia (a)
Monotremes	1	Introduced placentals—	
Marsupials	60	Rodents	5
Native placentals—		Land carnivores	2
Bats	23	Ungulates (Horses, Deer, Camels, etc.)	9
Rodents	24	Rabbits	1 17
Marine mammals :			— —
Seals (b)	2		
Dugong	1		
Whales	22		
Land carnivores—Dingo	1 73	TOTAL, ALL SPECIES	151
	—		—

(a) Total numbers of species are from *A Guide to the Native Mammals of Australia* by W. D. L. Ride. (b) Only resident seals are counted. Antarctic seals are occasionally 'shipwrecked' on southern coasts but these are clearly stragglers into the area.

Within Western Australia the best-established groups of native placental mammals, i.e. the bats and rodents, are distributed in much the same ecological manner as are the marsupials; some are dry country forms like *Leggadina hermannsburgensis*, the small mouse which builds mounds of pebbles on stony ridges⁽⁸⁾, others are predominantly animals of the wet tropics like the majority of the Fruit-bats or Flying Foxes (*Pteropus*

(8) It is suspected that these may be dew-traps.

and *Macroglossus*), while yet others are confined to the country of reliable winter rainfall in the South-West, e.g. the Southern Bush-rat (*Rattus fuscipes*). These native placental mammals are of great zoological interest because some of them, and in particular the native rats and mice, have been here for many millions of years and closely parallel (in adaptation to our stringent ecological conditions) their relatives in similar places in other lands. Thus, we have hopping-mice (*Notomys*), like miniature kangaroos, which are very similar in appearance and habits to the jumping-mice (*Zapodidae*) of the American and Eurasian dry-lands, and the jerboas (*Dipodidae*) of Africa; but it must be emphasised that the jumping specialisations of our own hopping-mice have evolved quite independently within Australia.

Some of our native placental mammals are economically important. Until 1963 a shore-based Western Australian fishery at Carnarvon depended upon the migrating groups of Humpback Whales (*Megaptera novaeangliae*) which move along the western coast between their feeding grounds in Antarctic waters and their breeding places in the tropics. Unfortunately, immoderate exploitation of the stocks (especially the breeding stock) had so reduced the population that it was in danger of extermination and the shore-based fishery collapsed. Another whale fishery, at Albany, is dependent upon Sperm Whales (*Physeter catodon*). The catching of Southern Fur-seals (*Arctocephalus doriferus*), formerly lucrative, is now no longer permitted. The Dugong (*Dugong dugon*) was once an important source of food for the natives of the coastline from Shark Bay to the Northern Territory. The Dingo (*Canis familiaris dingo*) has probably not been in Australia for as long as the other native mammals, and may well have entered with the Australoid people who were ancestral to our present Aborigines. In some parts of the State the Dingo is a major problem to the pastoral industry because of its attacks on livestock.

The preceding table also shows that there is a large number of introduced species as well as native mammals. These are now a part of the wild mammal fauna of Western Australia and all are placentals. Some of these species are also agricultural and pastoral pests and they have become so well entrenched in the environment that there is no doubt that any discussion of the mammalian fauna of the State must take them into account and mention should be made of some of them here. Red Deer (*Cervus elephas*) occur spasmodically in the South-West around Pinjarra, Waroona and Harvey. Camels (*Camelus dromedarius*) occur in large numbers and are distributed through the Eastern Goldfields up through the Pilbara and into the Kimberley. They have been declared vermin around Laverton, Nullagine, Port Hedland, and Halls Creek. Donkeys (*Equus asinus*) have a distribution very much like that of the camel and also occur generally throughout the Kimberley. Wild goats (*Capra hircus*) are ubiquitous in dry country but are mainly concentrated in the Murchison and the North-West. A small herd of Black-buck (*Antelope cervicapra*) occurs near Geraldton. Rabbits (*Oryctolagus cuniculus*) are widespread in Western Australia but are only of economic significance south of the Murchison. They are by no means the problem that they used to be, due largely to programmes of intensive rabbit extermination. Foxes (*Vulpes vulpes*), declared vermin, are also widespread but do not commonly occur north of the De Grey River, having only been reported spasmodically from the Kimberley Division. The domestic cat run wild (*Felis catus*) occurs commonly in the bush and is an efficient predator on native fauna. It became feral in the early days of settlement and soon spread throughout the Colony. The naturalist Keartland while a member of the Calvert Scientific Exploring Expedition in 1896, recorded that 'in the desert of North-West Australia' he saw a tabby cat at least 400 miles [644 kilometres] from the nearest house. Earlier still the ornithologist Tom Carter writing in 1887 from the Carnarvon district spoke of 'the domestic cat, which is found quite wild and of a large size all through the colony'.

Examination of the composition of the older mammal fauna of Western Australia, i.e. monotremes, marsupials, bats and native rodents, as set out in the following table, reveals that only one-eighth of all species recorded from the State today appear to occur only in Western Australia. The South-West contains by far the greatest number of endemic species.

ENDEMISM OF NATIVE MAMMALS TO WESTERN AUSTRALIA

(excluding marine mammals)

Group	All endemic and non- endemic species	Number of endemic species—			
		Total endemics	Endemics north of Fitzroy River	Endemics of South-West Land Division	Endemics of remainder of State
Monotremes	1	....	....	....	....
Native cats	23	5	1	2	2
Marsupial moles	1	....	....	....	....
Bandicoots....	7	....	....	....	....
Possums	8	2	1	1	....
Wombats	1	....	....	....	....
Kangaroos and Wallabies	20	4	....	3	1
Rats	24	3	....	2	1
Bats	23	....	....	....	....
Dingo	1	....	....	....	....
Totals	109	14	2	8	4

Birds

The bird fauna of Western Australia consists of a selection of the species occurring in eastern Australia, with only a very minor development of endemic forms. All of these latter, except one (the Western Australian King Parrot, *Purpureicephalus spurius*), have a close and obvious affinity to other Australian forms. The quantitative relationship of the Western Australian bird fauna to that of Australia as a whole is indicated in the following table, which has been prepared on an ecological basis.

	Number of breeding species		Number of non-breeding visiting migratory species	
	Western Australia	Australia	Western Australia	Australia
Land birds	307	499	6	8
Inland water birds	51	52	33	42
Sea birds	25	38	33	55
Total	383	589	72	105

Representatives of most of the families and genera of Australian birds occur in this State. Notable absentees include the Cassowary (*Casuarius casuarius*), Brush Turkey (*Alectura lathamii*), several of the fruit-pigeons, the Crimson Rosella (*Platycercus elegans*), Lyre-bird (*Menura novaehollandiae*), several honeyeaters including the Regent (*Zanthomiza phrygia*), Apostle-bird (*Struthidea cinerea*), Cat-birds (*Ailuroedus*), Satin Bower-bird (*Ptilonorhynchus violaceus*) and Rifle-birds (*Ptiloris*).

Space is insufficient to detail all the forms occurring in Western Australia. Mention may be made only of some distinctive species and groups which are common and widely distributed.

The Emu (*Dromaius novaehollandiae*) is still numerous all over the State and is occasionally encountered in the Darling Range near Perth. Australia's only breeding species of penguin, the Fairy Penguin (*Eudyptula minor*), nests on islands off the southern and south-western coasts as far north as Carnac near Fremantle. The Mallee-fowl or Gnow (*Leipoa ocellata*) is still plentiful and, after a period of decline during which its disappearance was feared, it is now increasing in abundance. All of the widespread

species of Australian quails occur but owing probably to the scarcity of natural grasses in the south are not individually very numerous. Among the pigeons two species have shown notable recoveries in population strength. After a long period of scarcity the Common Bronzewing (*Phaps chalcoptera*) began a cycle of increase about 1936 and is still very abundant. The rare Flock Pigeon (*Histriophaps histrionica*) of the more arid country of the North-West and the far North has declined all over Australia and had not been recorded in this State since 1927 until 1958 when considerable flocks were observed in the Hamersley Range and the Fortescue River country. It has also reappeared in parts of the Kimberley Division.

A very distinctive member of the rail family is the Black-tailed Native Hen or Gallinule (*Tribonyx ventralis*). It is a creature of the drier country but is subject to violent fluctuations in numbers, when it is liable to invade the South-West in great strength. A famous occasion was in May 1833 when it overran the settlers' fields and gardens around Perth and did considerable damage to the crops. Similar irruptions took place in 1853, 1886, 1897 and 1919. Later invasions, such as those in 1952 and 1964, have been on a much more modest scale. Of the three Australian grebes the most plentiful is the Hoary-headed Grebe (*Podiceps poliocephalus*) which assembles in the winter in big flocks on the southern estuaries, including that of the Swan River.

In the petrel group there are five breeding species in local waters. The most numerous is one of the mutton-birds, the Wedge-tailed Shearwater (*Puffinus pacificus*) which nests on most islands between Carnac in the south and Sable Island, in the Dampier Archipelago, in the north. A second mutton-bird, the Fleshy-footed Shearwater (*P. carneipes*) nests between Cape Leeuwin and the Archipelago of the Recherche; it is a migratory species and in the winter months migrates to the north-western sector of the Indian Ocean. A similar trans-equatorial migrant is the White-faced Storm-petrel (*Pelagodroma marina*), a diminutive form rarely observed at sea. It nests often in vast aggregations on islands off the south coast and as far north as the Abrolhos. All of these species nest in the spring and summer months. The remaining two breed in the winter. The Great-winged Petrel (*Pterodroma macroptera*) shares the nesting islands off the south coast with the Fleshy-footed Shearwater in a sort of 'Box and Cox' relationship. The black and white Little Shearwater (*Puffinus assimilis*) has a wider nesting range, from the Recherche to as far north as the Abrolhos; in former times it nested at Parrakeet Island off Rottnest Island. In the winter months some twenty-two species of southern-breeding petrels visit local seas. They vary in size from the little Wilson Storm-petrel (*Oceanites oceanicus*), barely larger than a swallow, to the great Wandering Albatross (*Diomedea exulans*). The Wilson Storm-petrel 'winters' all along the Western Australian coast to the tropics and is a familiar sight around fishing boats in Shark Bay. The most common of the albatrosses is the Yellow-nosed Albatross (*Diomedea chlororhynchus*) and may be seen as far north as Point Cloates. The most familiar of these visitors is the dusky Giant Petrel (*Macronectes giganteus*). Ringing experiments have demonstrated that the birds seen here are first-year individuals making circumpolar flights round the Southern Hemisphere; marked birds found in the South-West had been ringed a few months previously in their nests at Heard Island, Macquarie Island, and islands in the South Orkneys in the South Atlantic.

All of the five species of Australian cormorants or shags occur locally. Despite complaints of their depredations on commercially important fish, investigations have cleared the birds of blame, though one species, the Black Cormorant (*Phalacrocorax carbo*), specifically identical with the Cormorant of Europe, does occasionally include edible fish in its diet. One marine species, the Pied Cormorant (*P. varius*), which enters the Swan River estuary and Peel Inlet, is mainly responsible for the guano deposits on the coastal islands. Deposits at Shark Bay were commercially exploited in the last century and at one stage, in 1850, a detachment of troops was stationed at The Quoin Bluff, Dirk Hartog Island, to ensure the collection of royalties. Pelicans in Western Australia, unlike those in eastern Australia, breed only on coastal islands and not on inland waters. Until recently the nearest breeding place to Perth, and presumably the origin of most of the Swan River Pelicans, was Pelican Island, Shark Bay. However, since 1962 a breeding colony has become established at Peel Inlet, Mandurah.

Fourteen species of terns are recorded for the southern parts of the State and three more for the Kimberley Division. Three of the seventeen are migrants from the Northern Hemisphere and ringed individuals of the European Common Tern (*Sterna hirundo*) and the Arctic Tern (*S. macrura*), marked in northern Europe, have been recovered near Fremantle. These birds must have reached our coast via the Cape of Good Hope. The Silver Gull (*Larus novaehollandiae*) is noteworthy for having two breeding seasons in the southern part of the State. On the islands at Safety Bay, for example, there is an egg-laying peak in the autumn and another in the spring.

The numerous Order of wading or shore-birds (sandpipers, dotterels, and plovers) includes a few locally-breeding species but the majority are migrants from the Northern Hemisphere, where they breed in the tundra zone of northern Asia. Though they frequent ocean beaches and estuaries, as well as swamps and lakes, they are listed in the category of 'inland water birds' in the table on page 66. Some twenty-five species of these birds, commonly called 'snipe' (though the true Snipe of eastern Australia, *Gallinago hardwickii*, does not occur in this State) migrate to Western Australia. In addition there are sixteen species of this Order which breed in Australia. One of them, the Red-capped Dotterel (*Charadrius alexandrinus*), is virtually identical with the rare Kentish Plover of England. Here it is very common and nests at Pelican Point on the Swan River. Another local breeder is the remarkable Banded Stilt or Rottnest Snipe (*Cladorhynchus leucocephalus*) which is an attractive inhabitant of the salt lakes of Rottnest Island. However, it nests only on the inland salt lakes. The nesting habits remained long unknown until colonies were discovered at Lake Grace and Lake King in 1930.

The Australian Bustard ('Wild Turkey', *Eupodotis australis*) is a magnificent bird which has been largely exterminated by shooters over much of south-eastern Australia and in the developed South-West of this State. It is not uncommon in sparsely-settled areas and individuals occasionally appear on the open coastal country quite near Perth. It has recently been demonstrated by ringing that the Straw-necked Ibis (*Threskionis spinicollis*) ranges between south-western Australia and northern and eastern Australia. Fledglings marked in the nests at Muchea have later been taken in the North-West, the Kimberley Division, Arnhem Land and near Orange (New South Wales).

The Brolga (*Grus rubicunda*) is a northern bird normally found as far south as Onslow, but some individuals may wander into the outer parts of the South-West as occurred in 1952. In the heron family a new bird has been added to the State list—the Cattle Egret (*Bubulcus ibis*), which appears to have colonised northern Australia from Indonesia and has now spread over much of eastern and Western Australia.

There are eighteen species of swans and ducks occurring in the State, one of the most remarkable, perhaps, being the Cape Barren Goose, which is now restricted to the islands of the Recherche Archipelago. Recent leg-ringing experiments have shown that the common and widespread Grey Teal (*Anas gibberifrons*) wanders indiscriminately all over Australia, its movements being influenced by availability of surface waters.

Though the Black Swan (*Cygnus atratus*) occurs all over Australia, and in fact is more plentiful in some of the other States, historical reasons give it a peculiar association with Western Australia. The bird was first recorded by Europeans in this State, by Antonie Caen, skipper of the Dutch ship 'Banda' in July 1636 off the north-west coast. The first specimens were captured on the Swan River by Willem de Vlaming in January 1697 and taken alive to Batavia, whence they astonished the scientific world. Vlaming named the river after them, and the first colonisation in 1829 was known as the Swan River Settlement. The bird became the emblem of the Colony and State, with the motto, *Cygnus insignis*. The birds do not, and probably never did, occur in the broadwaters of the Swan River estuary, but in the shallows at Lucky Bay and above Heirisson Island. During the 1890s the authorities imported birds from elsewhere in the State, and even from Victoria, and set them free, pinioned, in Perth Water, where they were an attraction in Mounts Bay when the old men's home was located near there.

The State is also well provided with hawks and eagles, twenty-four species being found within its limits. Most are harmless economically and the few that do take chickens and lambs are not serious depredators, though there is controversy on the role of the

Wedge-tailed Eagle (*Aquila audax*) which is, however, classified by the Agriculture Protection Board as vermin in certain districts in the central and north-west portions of the State.

There are not as many species of the parrot group in Western Australia as there are in eastern Australia but one species, the Western Australian King Parrot or Red-capped Parrot (*Purpureicephalus spurius*), is restricted to the South-West and has no near relatives elsewhere. The Twentyeight Parrot is a form of the Port Lincoln Parrot (*Barnardius zonarius*) and is common almost everywhere, being regularly present in King's Park, a natural reserve adjacent to the City of Perth.

The Kookaburra (*Dacelo gigas*), so common in the forests of the South-West, is not a Western Australian native but was introduced from eastern Australia by the Acclimatisation Board during January 1897. A similar species, however, the Blue-winged Kookaburra (*D. leachii*) occurs in the north, as far south as the Wooramel River. The Rainbow-bird (*Merops ornatus*) in the south is a strict migrant, arriving regularly in the first week in October. Local birds migrate to the north of the State, the wintering area being from the Gascoyne River northward, but some individuals cross the Timor Sea to the Indonesian islands. There are eleven cuckoo species in our area, the commonest being the Pallid Cuckoo (*Cuculus pallidus*) whose plaintive insistent note is heard soon after the winter rains set in.

In the great group of passerines, or song-birds (Order Passeriformes), the most celebrated is the Noisy Scrub-bird (*Atrichornis clamosus*), a primitive almost-flightless bird which until recently was believed to be the only Australian bird which had become extinct since white settlement. The last specimen was collected by the ornithologist A. J. Campbell at Torbay in 1889, but late in 1961 a surviving population was discovered at Two Peoples Bay east of Albany. Space is insufficient to deal in any detail with other members of this large Order. Throughout the State there are 172 species, of which 95 occur in the southern, settled parts and at least 33 are found in King's Park. A distinctive robin, the White-breasted Robin (*Eopsaltria georgiana*), occurs in the South-West. It is a relative of the yellow robins and is found in the dense coastal and forest thickets from Geraldton southward and east to Albany and the Porongurups. The Western Warbler (*Gerygone fusca*) is a sweet-voiced songster which may be heard in the street trees of Perth, the only Australian capital city in which it lives; in the other States the bird is an inland species. Another distinction of the Perth metropolitan area is that four species of blue-wren, a greater number of species than in the environs of any other capital city, have been noted there. One species, the Red-winged Wren (*Malurus elegans*), which used to live near the city, disappeared when Herdsman Lake was drained. The remaining species are the Splendid Wren (*Malurus splendens*), occasionally still seen in the University grounds; the Blue-and-white Wren (*Malurus leuconotus*) in the coastal dune scrubs, and the Causeway and Pelican Point samphire flats; and the Variegated Wren (*Malurus lamberti*) in the dune thickets. Honeyeaters are numerous, the largest, the Red Wattle-bird (*Anthochaera carunculata*), being a familiar bird in metropolitan streets and gardens. Most of the grassfinches are restricted to the Kimberley Division, where ten species are found. However, one of them, the widespread Zebra Finch (*Taeniopygia castanotis*), nests as near to Perth as Northam and York. Two bower-birds occur in the State. The Great Bower-bird (*Chlamydera nuchalis*) is confined to the Kimberley Division, but the Spotted Bower-bird (*C. maculata*) is found in the North-West and ranges south to the East Murchison country and Malcolm in the Eastern Goldfields.

In contrast with all other Australian States there are very few species of exotic birds established in Western Australia. (The same is true of the Northern Territory.) In the towns of the South-West two turtledoves are plentiful, the Indian (*Streptopelia chinensis*) and the Senegal (*S. senegalensis*). The Goldfinch (*Carduelis carduelis*), an escapee from aviaries, breeds freely in the Perth metropolitan area and around Albany. Recently another cage-bird escapee, the Red-browed Finch (*Aegintha temporalis*), an eastern Australian species, has established itself east of Kalamunda in the Darling Range near Perth. The

Indian or Ceylon Crow (*Corvus splendens*) repeatedly arrives at Fremantle on ships from the Orient but the vigilance of officers of the Department of Agriculture and port officials has led to the successful eradication of the unwanted immigrants. The House Sparrow (*Passer domesticus*) has been similarly kept at bay at Fremantle. This species did, however, make a temporary colonisation, from South Australia, in the vicinity of Eucla and Mundrabilla in 1917-18 but it failed to make any headway and disappeared from there.

Reptiles

In Western Australia the reptiles are represented by three major zoological groups or Orders. These are the Chelonia (four marine species of turtles and six of freshwater tortoises), Crocodilia (two of crocodiles) and the Squamata (sixty-two species of snakes and 159 of lizards).

The freshwater tortoises of Western Australia, like those of the rest of the continent, belong to the ancient group of side-necked tortoises. In most other parts of the world tortoises retract their heads straight backwards bending their necks in a vertical S-shaped curve. Australian tortoises, and certain others from South America, bend their necks sideways; this is believed to be an ancient character. Although the species of Western Australian tortoises are few, they are of great interest and their distributions are far from well understood. This is especially true of the species inhabiting the Kimberley. Freshwater tortoises do not seem to fall into simple faunal zone classifications. The common long-necked tortoise of the South-West, *Chelodina oblonga*, is closely related to the long-necked tortoise of the Kimberley Division, *Chelodina rugosa*. However, neither of the short-necked tortoises of the Kimberley Division, *Emydura australis* and *Elseya dentata*, is represented in the South-West. The river systems from the Irwin, in the Northern Agricultural Division to the De Grey in the northern Pilbara, have their own tortoise (*Chelodina steindachneri*), while a highly specialised short-necked tortoise (*Pseudemydura umbrina*) is apparently confined to a few square kilometres of winter swamps between Upper Swan and Bullsbrook to the north of Perth. Because of its vulnerability to extinction this last species is rigidly protected.

Marine chelonians also occur in large numbers around the coasts. The Green Turtle (*Chelonia mydas*), the species which is used for soup making, comes ashore to lay its eggs on the northern beaches. Attempts have been made in the past to exploit this species commercially but it is now protected. However, a non-profit organisation has been granted a licence on behalf of a group of Aborigines in the Kimberley region to take a specified number of eggs and day-old hatchlings. These will be raised by the Aborigines at a commercial Turtle farm at One Arm Point, north of Broome. A certain proportion will be liberated so that the wild stock will not be depleted.

A similar licence has been granted to allow the establishment of a crocodile farm at Kalumburu near Derby. The species involved is the Salt-water or Estuarine Crocodile (*Crocodylus porosus*) which, with the harmless fish-eating Freshwater Crocodile (*C. johnstoni*), is confined to the northern parts of the State.

Snakes and lizards are common and widespread throughout the State, and in numbers of obvious individuals they are probably surpassed among the vertebrates only by the birds. In the South-West, Bobtails (*Trachysaurus rugosus*) can often be seen crossing the roads at most times of the year, while the walker among coastal sand dunes on warm days cannot avoid noticing innumerable small dragon-lizards which move away from in front of him. In the southern part of the State the largest lizard which is at all common is the Goanna (*Varanus gouldi*). These are frequently between three and four feet in length. In northern areas the Perentie (*Varanus giganteus*) exceeds it in size. A few species are confined to the South-West and of these the most interesting are Mueller's Snake (*Rhinophlocephalus bicolor*), the Little Brown Snake (*Elapognathus minor*), the Black-Striped Snake (*Vermicella calonota*) and the Slender Snake Lizard (*Pletholax gracilis*) which is also one of our rarest species of lizard. An Eyrean species which never ceases to surprise the visitor is the terrible-looking Mountain Devil (*Moloch horridus*). This lizard is actually one of the most gentle and harmless of animals and lives exclusively on ants.

The snake fauna of the State is diverse and, like that of other parts of Australia, contains many venomous species, the best known being the Tiger Snake (*Notechis scutatus*), the Dugite (*Demansia affinis*), the Gwardar (*D. nuchalis*), the Death Adders (*Acanthophis antarcticus* and *A. pyrrhus*) and the Mulga Snake (*Pseudechis australis*).

The snakes and lizards are well described in Glauert's *Handbook of the Snakes of Western Australia* and *Handbook of the Lizards of Western Australia* (see bibliography at the end of this Part).

Because of the great distance of the Kimberley Division from centres of scientific research, insufficient is known of its snakes and lizards. As in the case of some of the smaller mammals, some endemic species of lizards have been described, but until much more scientific collecting and research has been done it will not be possible to evaluate such apparently-unique species. Some Kimberley species of lizard, e.g. the Frilled Lizard (*Chlamydosaurus kingi*), through being commonly illustrated in journals because of their bizarre appearance, have become familiar to the public.

Amphibia⁽⁴⁾

Unlike the other continents Australia has no newts or salamanders (Urodela) or worm-like gymnophionans (Apoda). However, frogs (Anura) are abundant.

The frogs of Western Australia fall into the same grouping (Bassian, Eyrean and Torresian) which was mentioned in the section on mammals. However, they lack the diversity of genera and species shown by other groups and only ten genera with about thirty species are known from south of the Tropic of Capricorn. Of these, two genera, *Metacrinia* and *Myobatrachus*, each with one species, are restricted to the South-West. Most of the other kinds of frogs are distinct from, but related to, species found elsewhere in Australia.

Since most of Western Australia is exceedingly dry it is of interest to note that frogs are common in these arid regions. Those species of *Heleioporus* which occupy marginal desert habitats overcome drought conditions by burrowing into the damp sub-soil. However, the arid-country species of *Neobatrachus* frequent clay soil where deep burrows are impossible and water can be lost. These species show no special capacity to endure greater water loss than *Heleioporus* species, but they do display an exceptional capacity for rapid replacement of water when water is present, as for example after thunderstorms. The water-holding frog, *Cyclorana platycephalus*, is found in inland and northern parts of the State. All 'desert' species retain an aquatic larval life, but this is much shorter than that of species in the well-watered parts of the State. The only species lacking aquatic larval development occur in the wetter South-West; these are *Myobatrachus gouldii*, *Metacrinia nichollsi* and *Crinia rosea*. *Myobatrachus gouldii* is the only species which exhibits any strong dietary preference and eats only termites (Isoptera).

Freshwater Fishes

The truly freshwater fish fauna of the southern part of the State is, by eastern Australian standards, an impoverished one and the species, with the exception of the freshwater catfish ('cobbler'), are diminutive in size. Most of the species are representatives of eastern Australian genera, such as the Pygmy Perch (*Nannoperca vittata*), Mountain Trout (*Galaxias truttaceus*), Black-striped Minnow (*G. pusillus*), and the Native Minnow (*G. occidentalis*). Others are more distinctive, with no near relatives in eastern Australia, such as the Nightfish (*Bostockia porosa*), the King River Perchlet (*Nannatherina balstoni*) and the newly-described scaled galaxiid (*Lepidogalaxias salamandroides*). There are several gobies (*Glossogobius suppositus* and *Lizagobius olorum*) and hardyheads (including *Atherinosoma edelensis*, *A. rockinghamensis*, *A. elongata* and *Craterocephalus cuneiceps*). A lamprey (*Geotria australis*) ascends the rivers to breed and has been recorded north to the Swan River system, but is more abundant in the streams emptying on the south coast. An eel (*Anguilla australis*) has been recorded from the South-West but it is not known whether it is native to the area or has been introduced.

(4) Written in collaboration with Prof. A. R. Main.

The north-western rivers have a richer fish fauna. The most widespread is the Spangled Perch (*Therapon unicolor*), a useful food fish which occurs in all rivers south to the Murchison. A large catfish (*Arius australis*) reaching 2.3 kg in weight, occurs in the systems south to the Fortescue. The Rainbow Fish (*Melanotaenia*), popular with aquarists occurs in the river systems of the Pilbara and the Kimberley. The remarkable Blind Gudgeon (*Milyeringa veritas*) and blind eel (*Anommatophasma candidum*) occur in wells and subterranean channels in the North West Cape area. The Kimberley Division has an even larger series of freshwater fishes. These include a catfish (*Neosilurus brevitor-salis*), various Bony Bream (*Fluvialosa*), various perch-like fishes (*Therapon*, *Acanthoperca*), Gudgeons (*Carrassioops*) and two freshwater saw-fishes (*Pristis clavata* and *Pristiopsis leichhardtii*). There is also a freshwater eel (*Anguilla bicolor*) in these far northern waters.

Marine Fishes⁽⁶⁾

The marine fish fauna of Western Australia is probably richer in species than that of any other Australian State. This is because the fish of the northern part of the State's very long coastline belong to the rich tropical Indo-Pacific fauna, while its southern fauna is a temperate one which includes many elements peculiar to Australian waters. The most up-to-date list of the species of Western Australian fish, published in 1948, enumerates 740 species, but since that time collecting has revealed about 120 more. Even so, this figure is still far short of the total number which, it is suspected, will eventually be found to be in the neighbourhood of 2,000.

From this it can be seen that there is much to be learnt about fish of Western Australia but it is probable that only a few of these species are confined to Western Australian waters. At present it seems that most of the fish occurring in the tropical part of the State are widely distributed, and species often range throughout the whole of the tropical Indian and Pacific Oceans, while the species which are found along the south coast usually occur also in the waters of South Australia, Victoria, Tasmania and southern New South Wales.

Between Cape Leeuwin and Shark Bay both northern and southern elements are found, the tropical element dominating as far south as the Houtman Abrolhos.

In addition to the widely-distributed tropical and southern elements, there are a number of species, between thirty and forty, which seem to be peculiar to Western Australia. It is necessary to be cautious here for two reasons. Firstly, because the Indo-Pacific fish fauna is, as a whole, poorly known and some fish, at present only recorded from Western Australia, may actually have wider ranges. Secondly, our classification of fishes is still imperfect so that fishes which we regard as endemic to Western Australia may be known from some other region, but under different names. On the other hand there can be no doubt that at least a proportion of these species which we now believe to be endemic will prove to be confined to Western Australian waters.

In the following very incomplete review, a number of the more important and interesting families and species are listed.

Of the major groups, the Elasmobranchii (sharks and rays) are richly represented, with nearly eighty species, of which the most familiar are the Port Jackson Shark (*Heterodontus portusjacksoni*), the Carpet Shark or Wobbegong (*Orectolobus maculatus*) and the shark known locally as the Swan River Whaler (*Carcharhinus leucas*), which can be caught in the Swan River as far upstream as the Garratt Road Bridge. It occurs during the summer months and one non-fatal attack in the Swan River has been attributed to this species. The Port Jackson Shark, the Carpet Shark and the Swan River Whaler are regarded as harmless to man; of the dangerous species, the Tiger, the Whaler and the White Pointer are perhaps the best known. Four fatalities from shark attack have been recorded for Western Australia (in 1803, 1923, 1925 and 1967) and a few people are known to have been maimed. It may be said, however, that in Western Australia the danger of shark attack is low.

Most major families of bony fishes are represented, but only a number of the more interesting or familiar species can be mentioned here.

(6) Contributed by Dr G. F. Mees.

There are about ten species of true herring (Clupeidae), one of which, the Pilchard (*Sardinops neopilchardus*) will in future probably become of economic importance. The rather similar-looking *Amblygaster postera* seems to be confined to Western Australia. The State is particularly rich in sea-horses and pipe fishes, there being some twenty-five species. The most familiar of these is perhaps the leafy sea-horse (*Phyllopteryx foliatus*) which is often found on the beaches after storms. The so-called Sand Shark or Rat Fish (*Gonorhynchus greyi*), a peculiar fish and the sole representative of its family, deserves mention; it is fairly common off sandy coasts of the South-West. Though eels are represented by several families and over twenty species, only three are common in the South-West; the Snake Eel (*Ophisurus serpens*), a slender golden brown eel inhabiting sandy estuaries, which is often taken for a snake and referred to as the water snake; Woodward's Eel (*Gymnothorax woodwardi*), found on rocky shores, yellowish green with a network of grey lines; and the Conger Eel (*Conger wilsoni*), which normally is dark brown in colour.

Garfishes (Hemiramphidae) are common. Of their relatives the Long Toms (Belonidae), only *Belone ciconia* is common in the South-West, the others being more tropical in distribution, though one of the northern species, *Belone hians*, has been found as far south as Rottnest Island.

Silversides and hardyheads (Atherinidae) are well represented and so are mullets (Mugilidae). Some representatives of these groups have been mentioned in the preceding section, which deals with freshwater fishes.

The family Serranidae, known as groper, rock cod, etc. are well represented by nearly thirty species. The best known is the North-west Groper (*Epinephelus tauvina*) which attains a length of more than two metres. Most species have a very wide, mainly tropical, distribution, but *Epinephelus rankini* is only known from a restricted area round Onslow and must be looked upon as endemic to Western Australia. In temperate waters the preceding family is more or less replaced by the related Hypoplectrididae.

Some small families, like the Australian Salmon (Arripidae), Whiting (Sillaginidae) and Snappers (Sparidae) are of great economic importance, though there are only a few species. On the other hand the Skipjacks (Carangidae) are the largest family of the State and comprise some thirty species. Another group which are also called Snappers (Lutjanidae) is prominent in the tropical part of the State. These are often referred to as North-west Snappers and should not be confused with the southern Snapper (*Chrysophrys unicolor*) which belongs to the Sparidae.

Coral fishes (Chaetodontidae) are richly represented, mainly along reefs in the tropics, but a number of species come down to the Houtman Abrolhos, and some even near to Perth. Most species have a very wide distribution in the Indo-Pacific, but one, *Chaetodon assarius*, has not been found outside Western Australia.

The Mackerel family (Scombridae), which includes mackerel, Spanish mackerel, tuna, bonito and albacore, is important both in tropical and temperate waters. The related marlins and swordfishes, well known to sporting fishermen, also occur in these waters.

Flatfishes (Heterosomata) occur in a great variety of species, and the same can be said of Parrotfishes and Wrasses (Scaridae and Labridae). All these groups are as yet very insufficiently known.

The stargazers and stonelifters are sluggish bottom fishes that deserve mention because of their unusual shape. One, *Ichthyoscopus barbatus*, occurs off the south-west coast and also in South Australia, and is regularly caught by anglers. Another species, *Ichthyoscopus insperatus*, a common fish of the north-west coast from Broome to Shark Bay, seems to be confined to Western Australia. The dragonets (Callionymidae), of which nine species have been recorded, are smaller, but their pretty appearance attracts attention, and one species, *Dactylopus dactylopus*, widely distributed in the Indo-Pacific, is regularly found off sandy beaches as far south as Rockingham.

Blennies (Blenniidae), weedfish (Clinidae), and gobies (Gobiidae) are small fishes of which there are many species; blennies are most plentiful in rockpools and on reefs in the tropics, while gobies are also found on sandy bottoms.

There are some twenty species of scorpion fishes known from the State, the most familiar of which are *Scorpaena sumptuosa* in the south, and the small *Scorpaena bynoensis* in the north; the first-mentioned species is also interesting in that, though it has been known for almost a century, it has never been recorded from outside Western Australia. Of the closely-related Synancejidae, the feared stone fish, three species are known from the State, one of which, *Erosa daruma*, is apparently restricted to the North-West and is known from but two specimens. A related species occurs in Queensland and Japan.

Flatheads (Platycephalidae) are common in the temperate part of the State.

An interesting family is that of the angler fishes or toad fishes (Antennariidae). Their curious shape with the leg-like pectoral fins always excites attention. There are about a dozen species, two of which are endemic to the State. One of these is *Echinophryne glauerti* which is occasionally found washed up on City Beach.

Leatherjackets (Monacanthidae) are a large group distinguished by the rough leathery skin and a single large erectile spine on the nape. Some species, like *Chaetoderma penicilligera*, are common and of attractive appearance.

Of the blowfish family, the common Blowie (*Tetraodon (Spheroides) pleurogramma*) needs special mention; it is extremely plentiful off the coast at Fremantle and in the Swan River estuary. It is poisonous to eat and is greatly disliked by anglers who find that it greedily takes their bait. Fishes of this family contain a poisonous substance called tetraodontoxin and the celebrated navigator Captain James Cook was very ill after eating a blowfish in the course of a voyage in the Pacific in 1774. Boxfishes (Ostraciontidae) and porcupine fishes (Diodontidae) are related groups, each represented by a number of species.

Further information about the commercial fishes in Western Australian waters is given in the Fisheries section of Chapter VIII, Part 1—*Primary Production* where the principal species of edible fish are listed together with the quantities of each species caught. The section also contains additional information relating to whaling (see *Mammals* earlier in this Part).

THE INVERTEBRATE FAUNA⁽⁶⁾

The invertebrate fauna of Western Australia is large and varied, as one would expect in a third of a continent which extends from temperate to tropical zones and includes both coastal and desert areas. Rather than spread our descriptions too thinly over this enormous field we have restricted ourselves to a brief summary of the position in relation to a few selected groups in which work is being actively carried out.

Several invertebrate species are commercially exploited here, the most important being the marine crayfish or rock lobster (*Panulirus cygnus*) which supports an extensive export fishery. Others commercially important include several species of octopus and squid, the Blue Swimming Crab ('Blue Manna', *Portunus pelagicus*), several species of prawns, two species of scallop (*Amusium balloti* and *Pecten modestus*), several species of squid, octopus and cuttlefish and three species of abalone. Pearl-shell was fairly extensively fished along the north-west coast but this fishery has now declined, the small quantity of pearl-shell now taken being used in the developing pearl-culture industry.

A summary of the terrestrial and freshwater invertebrate fauna and their ecology is given in Main's *Guide for Naturalists* (1968).

Echinodermata

The echinoderms of Western Australia have been shown by Clark (1946) to be derived from the tropical fauna to the north. About half of the species of northern Australia are widely distributed in the Indo-West Pacific region while the remainder are endemic to Australia. As one passes southward the proportion of endemic species rises until on the south-western coast nearly nine-tenths of the echinoderms are endemic to the region.

⁽⁶⁾ Written with assistance from Drs R. W. George, E. P. Hodgkin, Barbara Y. Main and B. R. Wilson, Mr G. W. Kendrick and Mrs L. Marsh.

All five groups of echinoderms, feather stars (Crinoidea), sea stars (Asteroidea), brittle stars (Ophiuroidea), sea urchins (Echinoidea), and sea cucumbers (Holothuroidea) are well represented. Eighty-five species of sea stars and fifty-five species of sea urchins are recorded from Western Australia including the continental shelf. The other groups have smaller numbers of species.

On the rocky and sandy shores of the South-West about twenty species of sea stars are common in shallow water. One of the most abundant is *Coscinasterias calamaria* which is widely distributed in the Southern Hemisphere. Sea urchins are represented by about twelve common species; on rocky shores the most abundant of these is *Heliocidaris erythrogramma* which has a southern Australian distribution.

There is an abundant echinoderm fauna in Cockburn Sound, between Garden Island and the mainland south of Fremantle, where a variety of habitats supports twenty-five species of sea stars, ten of sea urchins and many brittle stars, feather stars and sea cucumbers. Mud eating species such as the sea star *Stellaster inspinosus* and heart urchin *Echinocardium cordatum* are common in the deep basin of the Sound while several tropical species including the sea stars *Euretaster insignis* and *Echinaster varicolor* and the sea cucumber *Pentacta quadrangularis* are found in the reef and coral areas of the eastern shelf of the Sound. On the south coast, King George Sound has long been known as a rich collecting ground for echinoderms, but the fauna of other bays and inlets is much less well known.

Little is known of the echinoderm fauna of the northern coasts, and almost all that we do know comes from the publications of H. L. Clark (see bibliography at the end of this Part) who collected extensively in the Broome area and made smaller collections in other places. Near Broome, a wide variety of echinoderms was collected in his dredges and along the shore. In more recent years new collections have been made in the region but the specimens have not yet been studied.

The Crown of Thorns Starfish (*Acanthaster planci*) which feeds on living corals and has been responsible for extensive damage to coral reefs in other regions is known to occur off the north-west coast, but there are no records of plague populations. Specimens have been reported from Admiralty Gulf, Barrow Island, and the North West Cape area. In 1971 a fairly large population was discovered in the Dampier Archipelago; this is now being monitored and studied by a team from The Western Australian Museum, supported by a grant from the Commonwealth and Queensland Advisory Committee on Research into the Crown of Thorns Starfish.

Mollusca

The molluscan fauna of the Western Australian coastline has not been recently catalogued, but from the area within fifty-six kilometres of Fremantle 270 species of bivalves (Pelecypoda), and univalves (Gastropoda) are recorded. The smaller groups, chitons (Amphineura), octopus and cuttlefish (Cephalopoda) and tusk shells (Scaphopoda) are also represented.

Molluscs dominate the intertidal rocks of the west coast, especially chitons, periwinkles, and limpets; the limpets range from the very large *Patellanax laticostata* to the small *Notoacmea onychitis*. On the north-western coast, rock oysters (*Crassostrea tuberculata*) and barnacles take the place of limpets intertidally. The oysters are fished for food on a small scale in places where extensive beds are uncovered at low tide.

Bivalves occur mainly on sandy and muddy bottoms such as those of Cockburn Sound and King George Sound, and along the north-western coast. They are less plentiful on the unstable sandy shores of the open western coast. The Golden-lipped Pearl-shell (*Pinctada maxima*) is the basis of a flourishing pearl-culture industry in the north of the State. This species is favoured because of the quality of the pearls produced and because of the speed with which the nacre or mother-of-pearl is laid down on the 'seeds'. Using techniques developed by the Japanese these seeds are inserted into the pearl-shell's flesh to produce spherical pearls, or between the flesh and the shell to produce half-pearls. The small pearl-shell which is so abundant in Shark Bay belongs to the species *Pinctada*

albina which is widely distributed in the Indian and Pacific Oceans. It was formerly gathered for the natural pearls which, though small, are of a fine colour and texture.

The scallop (*Pecten modestus*) is dredged commercially in Cockburn Sound, and commercial trawling of the saucer scallop (*Amusium balloti*) is carried out in Shark Bay.

An expanding abalone fishery has been established in temperate waters. On the lower west coast the small Roe's or Western Black-lip abalone (*Haliotis roei*) is gathered. Along the southern coast east of Cape Leeuwin the larger Green-lip (*Schismotis laevigata*) and the Brown-lip abalone (*Haliotis conicopora*) are taken.

Many species of cowrie shells occur on the rocky shores of the north-west coast while a few species such as *Zoila friendii* and *Austrocyprea reevei* are confined to the south-western corner of the State. The north-west coast also has many endemic species of volute shells such as *Volutaconus hargreavesi*, *Amoria macandrewi* and *Amoria praetexta*.

Two kinds of gastropods without visible shells are conspicuous members of the marine fauna off Fremantle. One is the large sea-hare (*Aplysia gigantea*) with a small internal shell; it may be cast up on the beaches in large numbers after winter storms. The other is a nudibranch, with no shell at all, the colourful *Glossodoris westraliensis*, well known to visitors to Rottnest Island.

The non-marine molluscan fauna (terrestrial and aquatic) is quite diverse. Conspicuous in the South-West are species of the pulmonate genus *Bothriembryon*, which are adapted to a wide variety of habitats from cool temperate rain forest to arid steppe. In the Kimberley, North-West, and arid regions generally the snail family Camaenidae predominates. Throughout the State there are also many other smaller and inconspicuous terrestrial snails and a small number of aquatic snails and bivalves.

Corals

In Western Australia the wide continental shelf off the north of the State has coral platform reefs, islands and several very large true atolls, the fauna of which is still largely unknown.

Coral growth is restricted on much of the north and north-west coast by turbidity due to the outflow of rivers, muddy shoreline and the large tidal range.

Fringing and barrier reefs with rich coral growth occur in the relatively clear water of offshore islands such as the outer islands of the Dampier Archipelago where twenty-three genera of reef building corals are so far known.

From North West Cape a barrier reef extends southwards for nearly 160 kilometres. It lies between 800 metres and five kilometres off the coast with deep water off its outer edge and a shallow lagoon inshore. Limited collecting has so far revealed thirteen genera of reef-building corals, probably only a fraction of the number actually present. There is a rich and luxuriant growth of corals along the outer edge and dense thickets of staghorn corals (*Acropora* spp.) in the lagoon.

The most southerly true coral reefs in the State are found at the Houtman Abrolhos which lie near the edge of the continental shelf off Geraldton in latitude 28-29°S. *Acropora*, one of the most important reef builders, flourishes at the Abrolhos, where the minimum sea temperature seldom falls below 19°C, but does not occur further south except in Pleistocene fossil beds at Rottnest Island.

A number of reef corals extend their range into the south-west of the State, sometimes forming massive colonies. At Rottnest Island *Pocillopora damicornis* makes attractive pink clumps in reef pools and large colonies form a reef-like structure at Parker Point. In the Fremantle region, including Rottnest Island and Cockburn Sound, thirteen genera of reef corals are found. They are particularly well developed in parts of Cockburn Sound despite minimum water temperatures sometimes falling below 14°C.

The coral fauna is attenuated southwards with six genera in Geographe Bay and two species extending along the south coast east of Albany. One of these, *Plesiastrea urvillei* occurs right along the south coast of Australia but does not range north of Geraldton on the west coast.

Crustacea

The most important commercial species of crustacean in Western Australian marine waters is the Western Rock Lobster or 'Cray', *Panulirus cygnus*. It occurs from North West Cape in the north to Hamelin Bay in the south. In the tropics five additional species of *Panulirus* occur; these are collectively referred to as 'Green Crays' (*Panulirus versicolor*, *P. ornatus*, *P. homarus*, *P. penicillatus* and *P. polyphagus*). On the southern coast occurs *Jasus novaehollandiae*, which is the commercial species of rock lobster (crayfish) in south-eastern Australia, but it is not of economic importance in this State.

Two species of Shovel-nosed Lobsters are sometimes taken in prawn trawls. *Thenus orientalis*, the Moreton Bay Bug, occurs in Exmouth Gulf and further north. *Ibacus peronii*, the Balmain Bug, lives in sandy silt along our south coast. Both species are good eating. Offshore beyond the 180-metre depth limit of the Western Rock Lobster, lives a large spiny crab *Hypothalassia armata* which may develop into a commercial proposition.

The Swan River Prawn or School Prawn (*Metapenaeus dalli*) is taken by amateur and professional fishermen in the west coast estuaries by small hand-hauled nets. In the northern gulfs and bays larger prawns of the genus *Penaeus* and *Metapenaeus* are sought by large commercial prawn trawls for export. The present main centres are at Shark Bay, Exmouth Gulf and Nickol Bay and exploration of waters around the Kimberley Region is continuing. The main species are the Western King Prawn (*P. latisulcatus*), the Brown Tiger Prawn (*P. esculentus*) and the Banana Prawn (*P. merguensis*).

The Blue Swimming Crab (*Portunus pelagicus*), plentiful in the summer in the estuaries of the Swan River and at Mandurah, is one of the common commercial crabs of Australia.

Two common species of crab are the Rock Crab (*Leptograpsus variegatus*) and the Ghost Crab (*Ocypode convexa*). The Rock Crab scrambles among rocks and jetty piles of the west and south coasts, whereas the Ghost Crab digs spiral burrows at the edge of the beach and is endemic to the west coast.

Of the many other species of non-commercial crustaceans some groups have been recently monographed by scientific workers. These are the swimming crabs, mantis shrimps and pebble crabs.

Crustacea are also common in inland waters (see *Fauna of Inland Waters* earlier in this Part).

Spiders

Like most other invertebrate groups, the spiders are represented by a large number of genera and species and it is not possible at this stage to give an accurate picture of the relationships of the Western Australian fauna to the rest of Australia. Early work on the Western Australian spiders was restricted to the description and naming of species. Research now is centred on investigations of the biology of various species and the special adaptations of endemic forms to the particular conditions of the Western Australian environment. The most interesting of the spiders, when viewed from this aspect, are the burrowing groups, including primarily the Mygalomorphae ('trapdoor' spiders) and the Lycosidae (Wolf spiders). Some of these forms show special adaptations to semi-arid environments, to reduced food supply, and to flash-flooding, such adaptations being paralleled in many taxonomically unrelated genera. It is also of interest that some families, which in other parts of the world and in the wet forests of Australia are primarily web weavers and litter dwellers, are burrowers in the arid parts of Western Australia (and also in other dry parts of Australia). Such forms are essentially nocturnal and escape the unfavourable conditions of the day by remaining in their burrows and some species seal their burrows during the summer period.

Insects

The more important insect species occurring in Western Australia (particularly those of economic significance) are dealt with in Part 5 of this Chapter.

CONSERVATION OF THE FAUNA

In recent years the need to conserve the Western Australian fauna has received considerable publicity—this need has certainly never been greater than it is at present. In this State where new land has been brought into production for agriculture and the pastoral industry at a rate of approximately 405,000 hectares a year, and where the ever-increasing tempo of industrialisation and mining activity is obvious to all through its effect in increased population, the position of the native fauna is serious. This is because human introductions such as sheep and cattle, as well as the more direct effect of the plough and the scrub roller, are radically changing the environment, but also because an increase in human population has meant a higher level of utilisation of wild stocks such as ducks (which form a basis for sport), kangaroos (which form a basis for a lucrative trade in pet meat and hides), and rock lobsters (which support the most valuable single Australian fishery).

From the early days of settlement in Western Australia, legal provisions were in existence under which land could be reserved but, in early years it was not realised that the preservation of habitat is basic to conservation and that protection of individuals against killing is of insignificant value except in specialised cases (see below). In the early days, protection was afforded to some game animals, such as kangaroos, to prevent them from being shot out, but it was not until land development became widespread in the South-West that the first real attempt was made to set aside a large permanent native fauna and flora reserve. This was in 1894 when 64,750 hectares were gazetted between Pinjarra, North Dandalup and the Bannister. Unfortunately, this reserve later became alienated.

From this early attempt at habitat conservation has grown a very conscious need for extensive reserves carefully sited and selected in order to provide security for a representative sample of all the major habitats throughout the State. In 1959, a committee of the Australian Academy of Science produced such a plan for Western Australia and this plan has provided in subsequent years the basis for a policy of land acquisition for this purpose by the two major bodies who control land for conservation, *i.e.* the National Parks Board and The Western Australian Wild Life Authority.

Outside the reserves, fauna gains its protection through the Fauna Conservation Act. This Act replaced an earlier Game Act of 1912-1913 which had the rather different primary purpose of providing some measure of protection for those species of native fauna shot or hunted for sport. Under the Fauna Conservation Act, all native vertebrate terrestrial fauna, except those species declared vermin or declared otherwise unprotected, are protected against being taken, hunted, or confined. Owing to the very complex relationship between many species and their environment, such protective legislation has only a very limited long-term conservative effect in areas of closer settlement or intensive agriculture. On the other hand, in pastoral and forest areas, and in unalienated crown land not in fauna reserves, the legislation is much more valuable. The most important achievement of such protective legislation, however, is that it makes people conscious of the need to protect our native fauna and it is very likely that this educational function is its main justification except:

- (i) where animals occur on small islands or restricted places on the mainland in such numbers or in massed concentrations that they are vulnerable to destruction by man. Local examples are the Noisy Scrub-bird at Two Peoples Bay near Albany, sea birds in nesting concentrations on small islands, and island populations of mammals such as the Quokka on Rottnest or the various wallabies on Bernier and Dorre Islands in Shark Bay.
- (ii) where they are killed in the mass for commercial purposes, *e.g.* Humpback Whales, Fur Seals, Kangaroos;
- (iii) where they are killed for sport, *e.g.* the Bustard (Plains Turkey), ducks;
- (iv) where they are taken in very large numbers for zoos, circuses, or aviculture, *e.g.* finches and parrots.

In addition to its protective role, the Fauna Conservation Act establishes The Western Australian Wild Life Authority which is responsible for:

- (i) the initiation of conservation-oriented research in relation to the fauna;
- (ii) the acquisition, control, planning and management of an adequate system of sanctuaries (*i.e.* land reserved partly or entirely for the purpose of fauna conservation) including the preparation and implementation of working plans for each area; and
- (iii) advising the Minister for Fisheries and Fauna in relation to fauna conservation generally.

In Western Australia today the only terrestrial native fauna subject to any marked degree of human predation are ducks, eagles, emus, kangaroos of three species (the Grey, the Red, and the Euro) and the dingo. Excepting for certain vermin species on which a bonus is payable, figures for the total annual number killed are not available and until they are, and details of population size and rate of stock recruitment are known, it will not be possible to say whether these species are in serious danger. At present, only the crudest methods (*i.e.* of observing abundance and then subjectively comparing this with previous experience) can be used to say whether it is necessary to apply protection to prevent a serious decline in numbers.

By contrast, the position of the marine fauna is very different. There, intensive work has been done on whale, fish and invertebrate stocks in past years. There has been some cause for alarm in connection with an apparently depleting rock lobster stock, but conservative measures have been developed, and there are very good grounds for belief that these have been successful. The great reduction of the population of Humpback Whales due to over-predation is a matter of considerable shame—it illustrates well the dilemma of an industry which is faced with the alternative of a low level of fishing over an indefinite period, or a highly lucrative but short period of exploitation as though the stock were not capable of regeneration (a procedure akin to a mining operation). In the case of the whaling industry in Western Australia the position was complicated by the fact that the stock was hunted both by the shore-based Western Australian fishery and by the international pelagic fleets operating in the Antarctic.

At present, our greatest need is information upon which to base proper conservative measures. Protective legislation, no matter how effective it is in protecting individuals, must not be regarded as effective in conservation unless measures to protect the environment are also taken. As a result, the authors believe that the stages of work most urgent at present to conserve the Western Australian fauna are as follows.

- (i) To complete the reservation of lands designated in the report of the Western Australian Sub-committee of the Australian Academy of Science.
- (ii) Recognising that these areas are designated upon the best available information as to habitat type, but not upon actual surveys of the fauna, the authors believe that the areas must now be given thorough biological surveys to ensure that populations of all Western Australian species of animals and plants are contained within them; and also to estimate, as far as possible, the sizes of the populations which they contain.
- (iii) To get under way an increased amount of long-term work on the biology of species which are suspected to be vulnerable. Through this work their particular requirements will be discovered and an endeavour can then be made to ensure that the reserves contain these requirements.
- (iv) To insist on proper monitoring for any annual crop taken from vermin or other species subject to human predation so that these populations can be maintained at the level consistent with the State's particular requirements, and yet to avoid their extermination.

In Western Australia, land development has not yet gone too far for the State to preserve a representative section of its fauna and flora for all time. The keys to this are habitat conservation, reserve management, and education in conservation thinking.

Through these means, it will also be able to ensure that as much wild life as possible remains in altered environments as well. Indeed, if roadside verges, small township reserves and timber lots on farms are preserved, a surprisingly large number of native creatures will survive. The importance of these minor habitats, often regarded condescendingly by professional biologists who focus their attention on big reservations, cannot be sufficiently stressed. It is in these areas that the ordinary people and tourists gain an acquaintance with the native fauna and flora. Here man and animals will contrive to co-exist in intimate association with each other and so help to reinforce a popular sentiment for conservation.

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Chapter II—continued

Part 5—Entomology in Western Australia

With Particular Reference to Agriculture

(Contributed by the Biological Services Division of the Department of Agriculture)

The entomological field in Western Australia is so vast and the number of active workers on the subject so few that much still remains to be learned about the insects found in this State. A wide range of environmental conditions exists, from the tropical north to the temperate south, and the geographical isolation of the State has allowed the development of numerous endemic forms. As may be expected, the insect fauna of the Kimberley Division shows closer affinities with that of North Queensland than with the lower half of the State. The central desert, which reaches the coast to the south along the Great Australian Bight and to the north along the Eighty Mile Beach, forms an effective barrier discernible in the distribution of flora, mammals, insects and birds.

Owing to the limitations of space no attempt has been made to cover all the various insect orders which occur in the State, but the economic importance of various groups and their influence on major agricultural industries have been outlined, and some of the more outstanding forms of general interest have been mentioned.

CLASS INSECTA (Insects)

Order Collembola (Springtails)

The springtails include the lucerne flea (*Sminthurus viridis*) which was introduced into this State from eastern Australia in about 1910. It has spread to almost all the clover-growing areas in the South-West and is a very serious pasture pest. Partial control is exercised by the predatory bdellid mite (*Bdellodes lapidaria*).

Order Odonata (Dragonflies and Damselflies)

These insects are predatory in both the immature and adult stages and are usually regarded as beneficial creatures. However, they sometimes injure vegetable seedlings by ovipositing into furrow-irrigated crops. This has occurred mainly at Carnarvon where surface water is scarce and where irrigated plants are presumably mistaken for aquatic vegetation.

In order to survive in the diverse climatic conditions which exist in Western Australia, some members of the dragonfly group have developed the ability to breed in highly saline waters and to take advantage of ephemeral inland pools.

Orders Orthoptera, Mantodea, Blattodea, Phasmatodea (Grasshoppers, Locusts, Mantids, Cockroaches, etc.)

The grasshoppers and locusts are represented by a large number of different species. The most important pest form is the small plague grasshopper (*Austroicetes cruciata*). The normal habitat of this species lies roughly between the ten inch and the fifteen inch isohyets. For breeding it favours hard, bare soil and as extensive areas once utilised for wheat growing have now reverted to grazing, these uncultivated tracts periodically give rise to serious grasshopper swarms, which menace the adjacent wheat lands. The Australian plague

locust (*Chortoicetes terminifera*), so troublesome in other States, occurs in Western Australia but rarely as a plague species. In the Kimberley the yellow-winged locust (*Gastromargus musicus*), the migratory locust (*Locusta migratoria*) and the spur-throated locust (*Austracris guttulosa*) assume plague proportions, but in the southern agricultural districts they occur in the solitary phase only. The mantids (Mantidae) are represented by many different species. Their well-developed fore-limbs are admirably adapted for catching prey and, like their foliage-feeding relatives the phasmatids or leaf insects (Phasmatidae), their colouring harmonises remarkably with the sticks and leaves on which they rest. The cockroach fauna includes a large number of native species as well as several introduced forms. The commonest pest species is the cosmopolitan American cockroach (*Periplaneta americana*). Some large and quite colourful forms occur in the inland regions with the genus *Polyzosteria* well represented.

Order Isoptera (Termites)

The so-called white ant is a serious pest in all parts of the State. Earth-dwelling types occur mainly, and among the most important species may be cited the giant termite (*Mastotermes darwiniensis*) of the north and the widely distributed subterranean termite (*Coptotermes acinaciformis*). The large mounds of the spinifex termite (*Nasutitermes triodiae*) are characteristic of certain landscapes in the pastoral areas. Heavy annual losses are caused by termite damage and the use of such chemicals as dieldrin, aldrin, chlordane and creosote is recommended for the protection of timber structures.

Order Phthiraptera (Lice)

Indigenous species occur on birds and native mammals, and various introduced forms infest domestic poultry, horses, cattle and sheep.

Order Thysanoptera (Thrips)

This order is represented locally by a large number of native species as well as several introduced forms. The most serious native species is the plague thrips (*Thrips imaginis*) which may swarm in apple blossoms and seriously affect the crop setting.

Thrips tabaci, often called the onion thrips, is a carrier for the plant disease spotted wilt. Severe damage to tomato plants may result from this virus.

Order Hemiptera (Bugs, Aphids, Scale Insects)

This group contains a large number of pest species, many of them introduced. A serious vegetable pest is the green vegetable bug (*Nezara viridula*) which is partially controlled by an introduced wasp parasite, *Trissolcus basalus*. The native Rutherglen bug (*Nysius vinitor*) may at times swarm on vegetables and fruit trees, but seems less serious in this State than on the other side of the continent. The crusader bug (*Mictis profana*), so named because of the light-coloured St Andrew's cross on the back of the adult, feeds normally on acacias and other native plants, but it frequently invades cultivated areas and it may be troublesome to young citrus. The apple dimpling bug (*Campylomma livida*) is a native species which sometimes causes severe malformation of apples by feeding upon the very small developing fruit.

One native aphid (*Anomalaphis comperei*) has been recorded. The only two districts from which it has so far been collected are Albany and Karridale where it has been found infesting native peppermint (*Agonis flexuosa*). A point of interest about these occurrences is that the aphids were associated with a heavy Argentine ant infestation in the area. Since the removal of the ants, following dieldrin spraying, no further aphids have been discovered.

Numerous introduced species occur as pests on vegetables, garden plants and fruit trees, e.g. *Myzus persicae* (peaches, potatoes, rape, etc.), *Toxoptera aurantii* (citrus), *Brevicoryne brassicae* (cabbages, cauliflowers, rape, etc.) and *Eriosoma lanigerum* (woolly aphid of apples). The cowpea aphid (*Aphis craccivora*) which carries a virus disease of subterranean clover known as 'stunt' has also been found attacking lupins.

Of the native coccids the gall-forming members of the genus *Apiomorpha* are among the most remarkable. The woody galls in which the female insects pass their days vary from small structures a fraction of an inch across to woody knobs the size of an apple. From an economic point of view, however, the various introduced scale insects demand most attention. Included in the list of pest species are the following:

San José scale (*Quadraspidiotus perniciosus*), which is a serious pest of apples.

Red scale (*Aonidiella aurantii*), which is found mainly on citrus but with a wide host range.

Brown olive scale (*Saissetia oleae*), which is found attacking citrus, stone fruits and garden shrubs.

White wax scale (*Gascardia destructor*), which is mainly a pest of citrus but also attacks many cultivated shrubs.

Soft brown scale (*Coccus hesperidum*), which has a wide host range but is of greatest importance on citrus.

Grass-crown mealybug (*Antonina graminis*), which is a widespread and troublesome pest causing damage to lawns particularly in warm parts of the State.

Order Coleoptera (Beetles)

This order is the dominant one among existing insects and is represented in Western Australia by many and varied forms. The carnivorous ground beetles (Carabidae) are widely distributed, one of the best-known species being the green carab beetle (*Calosoma schayeri*). The tiger beetles, of the sub-family Cicindelinae, are of interest not only because of the metallic colouration seen in many forms but because of their association with the inland salt-lakes. The larvae are subterranean and may be collected by digging on the lake margins.

The ladybirds (Coccinellidae) comprise a group of considerable economic importance and in addition to native species the State contains a number specially introduced to combat various scale insects and aphids. Among the best known of the introduced species are the mealybug ladybird (*Cryptolaemus montrouzieri*) and the common ladybird (*Leis conformis*). The larvae of *Cryptolaemus* are covered with a whitish material which makes the insect superficially resemble the mealybugs upon which it feeds. *Leis conformis*, in conjunction with the wasp parasite *Aphelinus mali*, plays an important role in combating the woolly aphid of apple trees. Destructive leaf-eating ladybirds belonging to the genus *Henosepilachna* were once found only in the northern parts of the State where they attack vegetables, especially pumpkins and melons. In 1956, specimens of *Henosepilachna* were collected in Perth. Since then they have become established in several suburban areas, but how the introduction occurred is not known.

The jewel beetles (Buprestidae) contain some of the most colourful beetles to be found anywhere in the world. Western Australia is particularly rich in species and at times the beetles may be found in large numbers on flowering mallee and sand plain flora. One of the most attractive is the metallic green *Stigmodera gratiosa*, and one of the largest is *Julodimorpha bakewelli*, measuring almost three inches in length. Although the beetle larvae are wood borers, closely resembling the 'bardee' in appearance and habits, they are of little economic importance.

The cockchafers or scarabs (Scarabaeidae) are represented by a great diversity of forms. Several species may swarm on to flowering fruit trees and roses in the early summer and are popularly known as spring beetles. The bronze-coloured *Colymbomorpha lineata* is a common pest of apple trees during the blooming period and the saddle-backed beetle (*Phyllotocus ustulatus*) sometimes visits citrus blossoms in large numbers. An introduced species commonly known as the African black beetle (*Heteronychus arator*) has gained a firm footing in the State and is a troublesome pest of lawns and turf. It is also growing in importance as a pasture and vegetable pest. A native species of *Colpochilodes* has caused spasmodic damage to cereal crops and clover pastures in the southern portions of the State.

The longicorn beetles (Cerambycidae) are a group of wood-boring insects represented by a number of different species. They are often blamed for the death of forest eucalypts, although investigations have shown that heavy beetle infestations are usually secondary

and that healthy trees are seldom seriously affected by the beetles. The larval stage of this group is the so-called 'bardee', at one time prized by the Aborigines as food. They are not a pest of structural timber as they do not attack seasoned material.

The leaf beetles (Chrysomelidae) may superficially resemble ladybirds in general appearance as some of them are rounded and quite brightly coloured. Two species have been introduced into the State for the purpose of combating St John's Wort, a troublesome weed in some districts. *Chrysomela gemellata* and *C. hyperici* were originally introduced into Australia from the South of France and liberated in Victoria with very satisfactory results. The local colonies were obtained from the latter source and have become established in several districts. In some situations a reduction in St John's Wort can be attributed definitely to beetle activity, but in many areas the picture is obscure due to the extensive use of chemical sprays.

Common pest species in eastern Australia are the pumpkin beetles (*Aulacophora hilaris* and *Rhaphidopalpa palmerstoni*). These beetles are found in the north of the State but do not extend into the cooler latitudes.

The weevils (Curculionidae) are a very specialised group characterised by the presence of a rostrum or 'snout' which bears the mouth and antennae. The genus *Leptopius* contains a number of large greyish weevils, many of which breed in association with acacias. One of the best-known members of the family is the red-legged weevil (*Catasarcus asphaltinus*) which feeds on eucalypt foliage and may disfigure young street trees. The almost world-wide rice weevil (*Sitophilus oryzae*) is our principal pest of stored grain, but the granary weevil (*S. granarius*) also occurs. Two common orchard pests are the introduced apple weevil (*Otiorynchus cribricollis*) and Fuller's rose weevil (*Pantomorus cervinus*).

Order Neuroptera (Lacewings)

This order contains a number of useful insects, for many of the neuropterous larvae feed upon scale insects and other pests. The family Myrmeleontidae has a number of large, rather dragonfly-like species, the larval stages of which build conical sand pits and are commonly known as ant lions. Amongst the most remarkable of the local lacewings are two members of the family Nymphopteridae in which the hind wings are greatly modified. In the genus *Croce* they are long and thread-like and in the spoonwinged lacewing (*Chasmoptera hutti*) they are spoon-shaped or paddle-shaped.

Order Diptera (Flies, Mosquitoes, etc.)

This group contains a vast number of species, many of which are of major economic importance.

The mosquitoes are well represented, the commonest species being the brown house mosquito (*Culex fatigans*) and the yellow-fever or dengue mosquito (*Aedes aegypti*). The latter species is the carrier for dengue fever in the northern portion of the State. The anophelines are represented by the widely distributed *Anopheles annulipes* and several much rarer forms. *A. annulipes*, together with *Aedes alboannulatus*, have played an important part in the spread of the rabbit virus *Myxomatosis*.

Of the introduced flies, those causing most trouble are the Australian sheep blowfly (*Lucilia cuprina*) and the Mediterranean fruit fly (*Ceratitis capitata*). The buffalo fly (*Haematobia exigua*) is a serious stock pest in the Kimberley Division of the State, but so far has not become established in the cattle areas of the south. It is believed to have originally reached Australia on buffaloes introduced from Asia.

The common house fly (*Musca domestica*) is widespread as is also the native bush fly (*Musca vetustissima*).

Insecticides such as DDT, dieldrin and the various organic phosphates gave outstanding control of various fly pests for several years. The widespread development of resistance in both house fly and blowfly populations has greatly complicated the matter, however, and drawn attention to the importance of preventive measures, such as sanitation in the case of house flies, and the Mules operation and crutching in the case of the sheep blowfly.

The March flies (Tabanidae) are well represented but, although their blood-sucking habits render them annoying, both to livestock and humans, they are not a serious pest.

Of the many useful flies may be mentioned the blowfly-like tachinids which parasitise caterpillars, grasshoppers and other pests and the bee flies (Bombyliidae) which parasitise the eggs of other insects. The maggots of the bombyliid fly (*Cryptomorpha flaviscutellaris*) are commonly found in the egg pods of the small plague grasshopper (*Austroicetes cruciata*).

Order Siphonaptera (Fleas)

A number of introduced as well as native fleas occur in this State. The rabbit stickfast flea (*Echidnophaga myrmecobii*), found originally on native mammals, is a very common parasite of rabbits in the drier parts of the State. The poultry stickfast flea (*E. gallinacea*) closely resembles the former species but is mainly a pest of poultry and domestic animals. The oriental rat flea (*Xenopsylla cheopis*), the human flea (*Pulex irritans*) and the cat and dog fleas (*Ctenocephalides felis* and *C. canis*) are among the most important introduced species.

Order Lepidoptera (Moths, Butterflies, etc.)

The primitive swift moths (Hepialidae) are represented locally by a number of very beautiful forms. The larvae are wood borers but do not occur in sufficient numbers to constitute a serious forestry pest. Several large and striking members of the genus *Aenetus* occur in the lower South-West.

A group of small native moths of the family Pyralidae, sub-family Crambinae and commonly known as pasture webworm moths (*Hednota pedionoma*, *H. crypsichroa*, etc.) are serious pests of cereal crops (excepting oats) and grass pastures. Depredations are controlled by planting on clean fallow, but the recent trend towards ley farming has greatly favoured these pests.

A family of considerable interest to the orchardist is the Tortricidae, in which group are included the codling moth (*Cydia pomonella*) and the oriental fruit moth (*C. molesta*). Outbreaks of codling moth have occurred on a number of occasions, but drastic eradication measures have so far prevented this major apple pest from becoming permanently established and have given Western Australia the distinction of being the only large apple-producing country where the moth is not a major problem. The oriental fruit moth has not recurred since eradication measures were taken against an outbreak in the Bickley Valley in 1952.

One of the best-represented families is the Noctuidae which contains several important pests. Included under this heading are the native budworm (or climbing cutworm) and the cotton bollworm (*Heliothis punctigera* and *H. armigera*), the cluster caterpillar (*Spodoptera litura*), the rough bollworm (*Earias huegeli*), the brown cutworm (*Agrotis munda*) and the southern armyworm (*Persectania ewingii*). The first four species are serious pests in the cotton areas of the north. The fruit-sucking moth (*Othreis materna*) also belongs to this group and causes heavy losses in citrus fruit grown around pastoral homesteads in the Kimberley and the North-West. In almost all cases where moths and butterflies are regarded as pests it is only the caterpillar stage which is destructive. The fruit-sucking moth, however, has a rasp-like proboscis capable of piercing orange and citrus skins and then sucking up the juice. Fortunately the creatures do not normally range to the citrus areas of the South-West.

One of the most remarkable members of the family Agaristidae is the whistling moth (*Hecatesia thyridion*). The male of this species is active just at sunset and makes a loud clicking noise during its fast circling flight.

Other common moth pests are the cabbage moth (*Plutella xylostella*), the potato moth (*Phthorimaea operculella*) and the apple looper moth (*Chloroclystis laticostata*).

The beautiful dryandra moth (*Carthaea saturnioides*) with its large eye spots on the wings superficially resembles the emperor moths. Its range is restricted to south-west Australia and the creature is much prized by collectors.

The butterfly fauna of the State lacks many large and showy forms. Some of the northern species such as *Hypolimnas bolina nerina* are quite colourful but the State has nothing to compare with the conspicuous and beautiful species found in the tropics of eastern Australia.

The blues (*Lycaenidae*) are well represented and the association of many larvae with ant nests renders the group a particularly interesting one.

The skippers (*Hesperiidae*) are relatively drab-coloured butterflies with strong powers of flight. Over twenty species are recorded from the State and some forms are endemic to the South-West.

Only one butterfly is of economic importance and that is the introduced cabbage white butterfly (*Pieris rapae*) which reached this State in 1943. It attacks cabbages, cauliflowers and related plants as well as one or two other strong-tasting herbs such as watercress. The butterfly belongs to the whites, or *Pieridae*, which group contains a number of native species. Several members of this family, including the introduced cabbage white, display extraordinary powers of flight and the native caper white (*Anaphaeis java teutonia*) has been observed to carry out mass migrations of remarkable proportions on the eastern side of the continent.

A rather showy butterfly which appears to have become established here recently, at least around the Perth area, is the wanderer or monarch (*Danaus plexippus plexippus*). This large orange and black butterfly has apparently reached Western Australia from the other States. The colourful larvae feed on certain noxious weeds such as the introduced narrow-leaf cotton-bush (*Asclepias fruticosa*).

Order Hymenoptera (Bees, Wasps, Ants)

The wood wasps and *Sirex* wasps (*Siricidae*) include several pests which have been established in New Zealand and Tasmanian pine forests. Imported timber (including 4 million superficial feet of prefabricated housing material) has been fumigated from time to time following the location of infested material.

The sawflies (*Tenthredinidae*) are represented locally by a number of native forms. The larvae of the genus *Perga* may often be seen in caterpillar-like clusters amongst the foliage of eucalypts. An introduced sawfly, the pear and cherry slug (*Caliroa cerasi*), is a common pest on pear and plum trees. The smaller parasitic wasps (ichneumonids, chalcids and their allies) are well represented and play an important role in combating many insect pests. Some attack insect eggs while others parasitise caterpillars, aphids and scale insects, so that without their aid the problem of pest control would be even more difficult than at present.

The ant fauna (*Formicidae*) of the State is extremely varied. One of the best-known native species is the meat ant (*Iridomyrmex purpureus*) which often nests on gravel paths and roadsides. Among the most remarkable of the local ants may be listed *Camponotus inflatus*, the honey-pot ant of the interior, and *Myrmecia regularis* of the karri forest area which has the frog *Metacrinia nichollsi* as a tolerated guest in its nest. The honey-pot ant derives its name from the fact that certain individuals in the nest store honey until their abdomens become inflated to the size of grapes. This honey is then regurgitated to other ants as required. These ants were once prized by the natives as a food delicacy.

Two important introduced ant pests are the Argentine ant (*Iridomyrmex humilis*) and the Singapore ant (*Monomorium destructor*). The Argentine ant was once widespread in the metropolitan area, Albany and Bunbury, with several other country outbreaks. The insect has been reduced in recent years, however, as a result of a large-scale control campaign. The scheme involved the spraying of all infested areas, with government-controlled labour, and a restriction on the movement of goods likely to spread the pest. Since the commencement of the campaign in 1954 approximately 59,000 acres have been treated at a cost of just under \$2 million.

The social wasps (*Vespidae*) were once known only from the northern portion of the State. About 1949, however, colonies of *Polistes variabilis* were located in various parts

of the Perth suburban area and they have now extended to some of the orcharding districts in the Darling Range. How the introduction occurred is not known.

The burrowing wasps, including the sand wasps (Pompilidae), the flower wasps (Scoliidae) and solitary ants (Mutillidae) are well represented. The mutillids are, of course, not true ants but the wingless females bear a superficial resemblance to ants which is further accentuated by their ability to inflict a painful sting. The flower wasps are particularly numerous and winged males carrying wingless females are common around flowering plants in the early summer. Of the solitary ants the black and white *Ephutomorpha cribricollis* is the best known. Most of the wasps mentioned are beneficial, for they store caterpillars and other insects in mud nests and underground burrows to serve as food for the wasp grubs.

The majority of native bees are solitary forms although some, like the Colletidae, often choose a common site for nest burrowing and hundreds of tunnels may be located close to one another.

The leaf-cutting bees (Megachilidae) often attract notice from their habit of cutting circular pieces from rose leaves and other foliage for use in nest construction.

The only native social bees belong to the genus *Trigona* which does not occur in the southern portions of the State.

CLASS ARACHNIDA (Spiders, Mites, Ticks, etc.)

Creatures grouped under the above heading are, of course, not true insects and will be dealt with only very briefly. Several forms are of considerable economic importance, as for example the cattle tick (*Boophilus microplus*) and the fowl tick (*Argas persicus*). The cattle tick is confined to the Kimberley Division and its range corresponds roughly with that of the buffalo fly. The ornate kangaroo tick (*Amblyomma triguttatum*) is a common species. It is occasionally collected as an accidental parasite on domestic animals and man.

The most serious mite pest is the red-legged earth mite (*Halotydeus destructor*) which is very destructive to young legumes and other seedlings. It may be particularly troublesome on subterranean clover pastures. Other mites of importance to orchardists and market gardeners are the spider mites (Tetranychidae) which include such cosmopolitan species as the two-spotted mite (*Tetranychus urticae*) and the bryobia mite (*Bryobia rubrioculus*).

Spiders constitute a large group, most of which are useful on account of their insectivorous habits, although bites from some of the larger species may produce painful after-effects. The most dangerous local spider is the red-backed spider (*Latrodectus mactans hasselti*). This species, whose bite may even prove fatal, is easily recognised by the conspicuous red streak down the centre of the abdomen.

Scorpions of various kinds are widely distributed over the State and the larger ones may be able to inflict a painful sting. There is one record of a baby dying at Pemberton from the effects of scorpion venom but no other reports of serious after-effects are available and, generally speaking, the group is of little local importance.

FURTHER SOURCES OF INFORMATION

The difficulties confronting anyone trying to review in a few pages the entomological fauna of such a large State as Western Australia will be better appreciated if it is remembered that in the *Western Australian Year-Book* for 1898-99 the late A. M. Lea expressed the opinion that there were about 30,000 species of insects indigenous to this State. Many additions have been made in the last seventy-five years and one is faced with the problem of deciding which creatures warrant special mention and which must be excluded for lack of space. The general reader interested in consulting other short reviews of the local insect fauna is referred to A. M. Lea's article in the 1898-99 Year Book under the title of 'The Insects of Western Australia'; in the Year Book for 1900-01 the late H. M. Giles wrote 'A Glimpse of Western Australian Entomology'.

Two short summaries have also appeared in conjunction with science conferences in this State. The *Handbook and Review* published for the 1926 meeting of the Australasian Association for the Advancement of Science contained an article by L. J. Newman and the *Handbook* for the 1947 meeting of the Australian and New Zealand Association for the Advancement of Science printed a short summary of the local insects by L. Glauert.

Readers interested in more technical summaries are referred to Professor G. E. Nicholl's 'The Composition and Biographical Relation of the Fauna of Western Australia' (*A.N.Z.A.A.S.*, Vol. XXI, 1933, p. 93), the relevant volumes of *Die Fauna Südwest-Australiens* by Michaelsen and Hartmeyer, 1907-1930, and the report of the Swedish expedition under Dr E. Mjöberg.

More detailed information relating to the forms of economic importance will be found in the publications of the Western Australian Department of Agriculture.

Literature covering the general aspects of Australian entomology includes:

- ANON. *The Insects of Australia*. Division of Entomology, C.S.I.R.O. University Press, Melbourne, 1970. 1029 pp.
- BARRETT, C. AND BURNS, A. N. *Butterflies of Australia and New Guinea*. N. H. Seward Pty Ltd, Melbourne, 1951. 187 pp.
- BURNS, ALEXANDER N. *Australian Butterflies In Colour*. Reed, Sydney, 1969. 112 pp.
- COMMON, I. F. B. *Australian Moths*. Jacaranda Press, Brisbane, 1963. 128 pp.
- COMMON, I. F. B. *Australian Butterflies*. Jacaranda Press, Brisbane, 1966. 131 pp.
- COMMON, I. F. B. AND WATERHOUSE, D. F. *Butterflies of Australia*. Angus and Robertson Pty. Ltd., Sydney, 1972. 498 pp.
- MCKEOWN, K. C. *Australian Insects*. An Introductory Handbook. Published by R.Z.S. of N.S.W., Sydney, 1945. 303 pp.
- MAIN, BARBARA YORK. *Spiders of Australia*. Jacaranda Press, Brisbane, 1964. 124 pp.
- RIEK, EDGAR. *Insects of Australia*. Jacaranda Press, Brisbane, 1963. 128 pp.
- TILLYARD, R. J. *The Insects of Australia and New Zealand*. Angus and Robertson Ltd, Sydney, 1926. 560 pp.
- WATERHOUSE, G. A. *What Butterfly is That*. A Guide to the Butterflies of Australia. Angus and Robertson Ltd, Sydney, 1932. 291 pp.
- WATSON, J. A. L. *The Dragonflies (Odonata) of South-Western Australia*. Western Australian Naturalists' Club, Perth, 1962. 72 pp.

CHARACTERISTICS OF THE NATURAL REGIONS OF WESTERN AUSTRALIA

The subdivision of Western Australia into Natural Regions (see map on page 91) has been described by E. de C. Clarke in *Jour. Roy. Soc. West. Aust.*, vol. XII, pp. 117-32. A summary of the characteristics of these different Natural Regions (reprinted by courtesy of the University of Western Australia Press from Clarke, Prider and Teichert: *Elements of Geology for Western Australian Students*) is given below.

NATURAL REGION	TOPOGRAPHY	GEOLOGY	RAINFALL	WATER SUPPLY (a)	VEGETATION, ETC.
ANTRIM (<i>geographic</i>)	Tableland	Cambrian sediments and lavas	Summer, monsoonal, 20 to 40 inches	Catchments, wells and artesian	Grassland and savannah
NORTH-KIMBERLEY (<i>geographic</i>)	Dissected stony tableland	Younger Precambrian	Summer, monsoonal, 30 inches or more	Streams, springs, catchments	Luxuriant in valleys, sparse on tableland
FITZROY (<i>chief river</i>)	Very wide valleys and low hills	Palaeozoic (largely Permian)	Summer, monsoonal, 20 to 30 inches	Catchments and artesian	Grassland and savannah
CANNING (<i>A. W. Canning, surveyor and explorer</i>)	Sand ridges and table-top hills	Palaeozoic and Mesozoic	Summer, 15 inches or less	Springs, pools, artesian water? (undeveloped)	'Spinifex' (species of <i>Triodia</i>) and desert shrubs
CARNEGIE (<i>David Carnegie, explorer</i>)	Sand ridges and table-top hills	Mesozoic, Palaeozoic and Younger Precambrian	Variable and unreliable, probably about 5 inches	Catchments	'Spinifex' and desert shrubs
WARBURTON (<i>Warburton Range</i>)	Hills (some over 3,000 feet) separated by sandy country	Older Precambrian	Variable and unreliable, perhaps about 5 inches. Probably better than Carnegie Region owing to high hills	Catchments, some springs	'Mulga' (species of <i>Acacia</i>) and 'Spinifex'
NORTH-WEST (<i>common usage</i>)	Rugged hills. Rivers in well-defined valleys	Younger and Older Precambrian. Many economic minerals	Variable, unreliable, 15 inches or less	Wells, catchments, pools	'Spinifex', few shrubs and trees
MURCHISON (<i>common usage</i>)	Ridge hills and breakaways. Rivers in shallow beds. Salt 'lakes'	Older Precambrian. Economic minerals especially gold and nickel	Summer or winter, unreliable, 10 inches or less	Wells (potable groundwater)	'Mulga'. Eucalypts scarce except along rivers

KALGOORLIE ... (chief town)	... Less hilly than Murchison. Salt 'lakes'. No defined water-courses except salt lake system	Older Economic minerals especially gold and nickel	Mainly winter, unreliable, 10 inches or less	Catchments. Ground water too salty for use	Eucalypt forest, especially Salmon Gum (<i>E. salmonophloia</i>), Gimlet (<i>E. salubris</i>) and Red Morrel (<i>E. longicornis</i>)
WHEAT BELT ... (common usage)	... Same as Kalgoorlie Region	Older Precambrian, but few 'greenstones'	Winter, reliable, 10 to 20 inches	Similar to Kalgoorlie Region, but ground water potable in many places; therefore wells frequent	Eucalypt forest—Salmon Gum, Gimlet, and Morrel
JARRAH ... (chief timber)	... More dissected than Wheat Belt Region, especially near Darling Scarp	Like Wheat Belt Region but there is an extensive curass of laterite	Winter, reliable, 25 to 40 inches	Streams and springs	Forest of Jarrah (<i>E. marginata</i>), Wandoo (<i>E. rudunca</i> var. <i>elata</i>), Karri (<i>E. diversicolor</i>) and Marri (<i>E. calophylla</i>)
CARNARVON ... (chief town)	... Elevated plain with table-top hills	Palaeozoic, Mesozoic, Tertiary and later	Summer or winter, very unreliable, about 10 inches	Artesian in many places. Catchments, pools	Sparse scrub in north, denser in south
GREENOUGH ... (river)	... Sandstone tableland	Mesozoic and older	Winter, 15 to 20 inches	Springs, wells and catchments	Scrub
PERTH ... (chief town)	... Coastal plain	Mesozoic and later	Winter, reliable, 20 to 35 inches	Springs, wells, artesian	Scrub, swamp and forest
STIRLING ... (prominent range)	... Undulating tableland with abrupt ranges	Siliceous Tertiary sediments with inliers of Younger and Older Precambrian	Winter, 15 inches or less	Catchments. Stream water generally too salty for use	Heath and swamp
NULLARBOR ... (geographic)	... Tableland, no hills	Calcareous Tertiary sediments	Winter, 10 inches or less	Catchments. Sub-artesian	Poor grassland

(a) 'Wells' refers to those that draw on ground water, but are not artesian. 'Catchments' refers to water collected on the surface—naturally in gnamma holes, artificially by conserving the run-off. 'Pools' refers to pools in watercourses and includes rock holes.

CHAPTER III—CONSTITUTION AND GOVERNMENT

Western Australia is one of the six federated sovereign States which, together with the Northern Territory and the Australian Capital Territory, constitute the Commonwealth of Australia. Thus, in addition to having its own Parliament and executive government, it is represented in the federal legislature. As well as government at the Federal and State levels, there is a third system, that of local government, which functions through City Councils, Town Councils and Shire Councils.

OUTLINE OF CONSTITUTIONAL DEVELOPMENT

A Legislative Council was established in Western Australia shortly after its foundation as a Crown Colony and sat for the first time in February 1832. The Council was non-elective and consisted of the Governor and four senior officials. In 1839, membership was increased to nine when the Governor nominated four unofficial members. Additional appointments were made from time to time until the dissolution of the nominee Legislative Council in 1870 with the inauguration of representative government as provided for in the Australian Colonies Government Act of 1850. This Act, which enabled the establishment of representative governments in other Australian Colonies, withheld the privilege from Western Australia until such time as the Colony should be able to defray all costs of government from its own revenues, and it was not until 1870 that it was felt that Western Australia was able to satisfy this condition. The new Legislative Council, elections for which took place in October of that year, consisted of twelve elected members, three nominees and three officials. The number of members of the Council was increased in 1874 to 21, of whom 14 were elected, in 1882 to 24, of whom 16 were elected and in 1886 to 26, comprising 17 elected members, 5 nominees and 4 officials.

Following the passage by the Legislative Council of a Constitution Act in 1889 and subsequent representations made in London by delegates sent from the Colony, responsible government was granted to Western Australia by an Imperial Act assented to on 15 August 1890. Provision was made for the establishment of a Parliament of two Houses, to be known as the 'Legislative Council' and the 'Legislative Assembly', to replace the old Council. Proclamation of responsible government was made in Perth on 21 October 1890 and election of the thirty members of the Legislative Assembly took place in November and December. The fifteen members of the Legislative Council were nominated by the Governor, as provided in the Constitution Act, and the Parliament was officially opened on 30 December 1890. The Constitution Act of 1889, while prescribing a Council which was originally nominative, contained a provision that, after the expiration of six years or on the population of the Colony reaching 60,000, the Council should become fully elective. The required population was attained in 1893 and an amendment to the Act in that year enabled the election of twenty-one members to the Legislative Council, and at the same time increased the Legislative Assembly to thirty-three members. By an amendment of 1899, membership of the Legislative Council was raised to thirty and of the Legislative Assembly to fifty. Provision was made for the Legislative Assembly to be increased to fifty-one members by the *Constitution Acts Amendment Act (No. 2), 1965*. The increase in numbers, however, did not become effective until the State general election in 1968.

On 1 January 1901, Western Australia and the five other Australian Colonies were federated under the name of the 'Commonwealth of Australia', authority for the union having been given by the Commonwealth of Australia Constitution Act which was passed by the British Parliament in 1900. By a provision of the Constitution Act the constituent parts of the Commonwealth previously designated 'Colonies' became known as

'States'. Under the Constitution, powers are divided between the Parliaments of the Commonwealth and of the States by conferring power in respect of specific subjects on the Commonwealth either exclusively or jointly with the States, leaving the remaining powers to the States.

Procedure in both Commonwealth and State Parliaments is based on British practice. The legislatures consist of the Sovereign, represented by the Governor-General of Australia or the Governor of the State, and the elected members. In the field of executive government the British 'Cabinet' system has also been adopted. The members of the Cabinets must hold seats in the legislature as elected members. The Cabinet is responsible to the Parliament and continues in office only while holding the confidence of the Parliament. All Cabinet Ministers are members of the Executive Council, the supreme group of advisers to the Crown, and the Cabinet thus provides the executive government of the Commonwealth or the State. The Executive Council is presided over by the Governor-General of Australia or the Governor of the State and at its meetings, which are formal and official in character, the decisions of the Cabinet are given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

VICE-REGAL REPRESENTATION

The Governor-General of Australia

Under the Commonwealth Constitution, ultimate executive power is vested in the Crown and is exercised by the Governor-General as the direct representative of the Sovereign. Appointment to the office is made by the Crown after consultation with the Prime Minister of the Commonwealth. The present Governor-General is His Excellency the Right Honourable Sir Paul Hasluck, P.C., G.C.M.G., who was sworn in on 30 April 1969. During the absence from Australia of the Governor-General it is usual for the senior among the State Governors to be appointed Administrator. (See also *Appendix*.)

The Governor of Western Australia

The Governor of Western Australia is the personal representative of the Sovereign in the State and exercises the powers of the Crown in State matters. He is the titular head of the Government and performs the official and ceremonial functions attaching to the Crown. The present Governor of Western Australia, His Excellency Air Commodore Hughie Idwal Edwards, V.C., C.B., D.S.O., O.B.E., D.F.C., was sworn in on 7 January 1974. In the event of the Governor's absence from Western Australia the Lieutenant-Governor of the State is appointed Administrator. If there is no Lieutenant-Governor it is customary for the Chief Justice of Western Australia to be appointed Administrator. The Honourable Sir Albert Wolff, K.C.M.G., was commissioned as Lieutenant-Governor on 26 May 1968 and since that date has performed the functions of Administrator of the State during absences of the Governor.

The last Governor of Western Australia as a Colony was Lieutenant-Colonel Sir Gerard Smith, K.C.M.G., whose term of office expired on 29 June 1900 and the first Governor of the State was Captain Sir Arthur Lawley, K.C.M.G., who was sworn in on 1 May 1901. The names and dates of assumption of office of Governors, Lieutenant-Governors and Administrators from the foundation of the Colony to 1951 are shown in the *Official Year Book of Western Australia*, No. 1—1957. Subsequent appointments appear in Year Book No. 4 of 1964 and later issues.

THE FEDERAL PARLIAMENT

The legislative power of the Commonwealth is vested in a Federal Parliament which consists of Her Majesty the Queen (represented by the Governor-General), a Senate and a House of Representatives. Subject to the Constitution, the Federal Parliament is empowered to make laws concerning, among other things, defence, external affairs, customs and excise, trade and commerce with other countries and among the States, taxation, borrowing of money on public credit, currency and coinage, banking, insurance,

navigation, fisheries, quarantine, posts and telegraphs, census and statistics, immigration, naturalisation and aliens, copyrights and trade marks, bankruptcy, marriage, divorce and matrimonial causes, social services, and conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State. The Constitution provides that, when a law of a State is inconsistent with a law of the Commonwealth, the Commonwealth law shall prevail and the State law shall, to the extent of the inconsistency, be invalid.

The qualifications necessary for membership of the Federal Parliament and for voting at federal elections are described in the *Official Year Book of the Commonwealth of Australia*. Under the provisions of the *Commonwealth Electoral Act 1973*, which was proclaimed operative from 21 March 1973, the age qualification for enrolment, voting and candidature for federal parliamentary elections was lowered from twenty-one years to eighteen years.

The payment of allowances to Senators and Members of the House of Representatives is provided for in the Constitution and a superannuation scheme is established under the provisions of the *Parliamentary Retiring Allowances Act 1948-1973*.

The Senate

The Senate consisted originally of thirty-six members, six Senators being returned from each State. The Parliament is authorised by the Constitution to increase or decrease the number of members. The growth of the population since Federation having been such as to warrant a considerable enlargement of the Parliament, a Representation Act was passed in 1948 to provide for increased membership by raising from six to ten the number of Senators from each State. At the same time the alternative system of counting of votes in elections for the Senate was altered by the *Commonwealth Electoral Act* to one of proportional representation, a summarised description of which is given in the *Official Year Book of the Commonwealth of Australia*, No. 38, pages 82-3.

Members are elected on the basis of adult suffrage by the people of the State which they represent. As provided by the *Commonwealth Electoral Act 1918-1973*, enrolment as an elector is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting is compulsory for all enrolled persons in terms of an amendment of 1924 which operated for the first time at elections held on 14 November 1925. The term of office of a Senator is normally six years and commences on the first day of July following his election. One-half of the members retire at the end of every third year and are eligible for re-election.

Elections for the Senate were last held on 21 November 1970. The following table shows the Western Australian membership of the Senate as from 1 July 1971 as a result of the election.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE

Due to retire on 30 June 1974				Due to retire on 30 June 1977			
Name		Political party		Name		Political party	
Prowse, E. W. (a)	....	C.P.		Cant, H. G. J.	....	A.L.P.	
Sim, J. P.	....	Lib.		Drake-Brockman, T. C., D.F.C.	....	C.P.	
Wilkinson, L. D.	....	A.L.P.		Durack, P. D.	....	Lib.	
Willesee, D. R.	....	A.L.P.		Negus, S. A.	....	Ind.	
Withers, R. G.	....	Lib.		Wheldon, J. M.	....	A.L.P.	

(a) See Appendix.

A.L.P. = Australian Labor Party. C.P. = Australian Country Party. Ind. = Independent.
Lib. = Liberal Party of Australia.

The House of Representatives

State membership of the House of Representatives is on a population basis with the proviso that each State shall have at least five members. The Constitution provides further that the number of members of the House of Representatives shall be, as nearly as practicable, double the number of Senators. With the enlargement of the Senate from thirty-six to sixty members, the membership of the House of Representatives was increased, from the date of the 1949 elections, from seventy-four to 121, not including a member for the Australian Capital Territory, which achieved representation for the first time at this election, and a member for the Northern Territory, which had been represented since 1922. Western Australia's population growth had been such as to necessitate an increase in representation from five to eight, and this number was raised to nine in 1955 as a result of a redistribution following the Census of 30 June 1954. At the same time, the total number of members of the House of Representatives was increased to 122, excluding the two members for the internal Territories. Consequent upon the population changes disclosed by the 1966 Census, a redistribution of the State electoral division boundaries was carried out in 1968 and the following representation in the House of Representatives became effective as from the general election held on 25 October 1969: New South Wales 45, Victoria 34, Queensland 18, South Australia 12, Western Australia 9, and Tasmania 5, the total number of members (excluding the members for the internal Territories) being increased from 122 to 123.

Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years, by the people of the electorate which they represent. As provided by the *Commonwealth Electoral Act 1918-1973*, enrolment as an elector is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting is on the preferential system and is compulsory for all enrolled persons in terms of an amendment of 1924 which operated for the first time at elections held on 14 November 1925.

Elections for the House of Representatives were last held on 2 December 1972 and all Western Australian electorates were contested. The following table shows the Western Australian membership of the House at 31 December 1973.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES
AT 31 DECEMBER 1973

Electoral division	Name	Political party	Electoral division	Name	Political party
Canning	Hallett, J. M.	C.P.	Moore	Maisey, D. W.	C.P.
Curtin	Garland, Hon. R. V.	Lib.	Perth	Berinson, J. M.	A.L.P.
Forrest	Drummond, P. H.	Lib.	Stirling	Viner, R. I.	Lib.
Fremantle	Beazley, Hon. K. E.	A.L.P.	Swan	Bennett, A. F.	A.L.P.
Kalgoorlie	Collard, F. W.	A.L.P.			

A.L.P. = Australian Labor Party. C.P. = Australian Country Party.
Lib. = Liberal Party of Australia.

THE STATE PARLIAMENT

The Crown, represented by the Governor, and the Parliament, comprising a Legislative Council and a Legislative Assembly, constitute the legislature of Western Australia.

Executive government is based, as in the case of the Commonwealth and in other States, on the system which evolved in Great Britain in the eighteenth century and which is generally known as the 'Cabinet' system. The Cabinet consists of Ministers of the Crown chosen for the Ministry from members of Parliament belonging to the political party, or coalition of parties, which is in the majority in the Legislative Assembly. The Constitution requires that at least one of the Ministers be selected from members of the Legislative Council. In Western Australia, as in the other Australian States, the office of principal Minister is designated 'Premier'.

Since 1890, when responsible government was granted to Western Australia, there have been twenty-four separate Ministries as shown in the following table. No organised political party existed in the Colony until the formation of a Labour party in the 1890s. A Labour Ministry assumed office in 1904. As no previous Ministry had a specific party designation, the table has been annotated accordingly.

MINISTRIES FROM 1890

Name of Premier	Political party	Date of assumption of office	Duration		
			Years	Months	Days
Forrest	(a)	1890—29 December	10	1	17
Throssell		1901—15 February	—	3	12
Leake		27 May	—	5	25
Morgans		21 November	—	1	2
Leake		23 December	—	6	8
James	Labour	1902—1 July	2	1	9
Daglish		1904—10 August	1	—	15
Rason		1905—25 August	—	8	12
Moore		1906—7 May	4	4	9
Wilson		1910—16 September	1	—	21
Scaddan		1911—7 October	4	9	20
Wilson		1916—27 July	—	11	1
Lefroy		1917—28 June	1	9	20
Colebatch		1919—17 April	—	1	—
Mitchell		17 May	4	10	30
Collier		1924—16 April	6	—	8
Mitchell		1930—24 April	3	—	—
Collier		1933—24 April	3	3	27
Willcock		1936—20 August	8	11	11
Wise		1945—31 July	1	8	1
McLarty		1947—1 April	5	10	22
Hawke		1953—23 February	6	1	10
Brand		1959—2 April	11	11	1
Tonkin		1971—3 March	Still in office (b)		

C.P. = Country Party. L.C.L. = Liberal and Country League (c). Nat. = Nationalist.

(a) No specific party designation. (b) At 31 December 1973. (c) The name of the Party was changed to *The Liberal Party of Australia (Western Australian Division) Incorporated* on 15 July 1968.

THE MINISTRY AT 31 DECEMBER 1973 (a)

Name of Minister	Title of office
Hon. John Trezise Tonkin, M.L.A.	Premier, Treasurer, and Minister for Cultural Affairs
Hon. Alexander Donald Taylor, B.A., M.L.A.	Deputy Premier, and Minister for Development and Decentralisation
Hon. Thomas Daniel Evans, M.L.A.	Attorney-General, Assistant to the Treasurer, and Minister for Recreation
Hon. John Dolan, M.L.C.	Minister for Education, Transport, and Railways, and Leader of the Government in the Legislative Council
Hon. Donald George May, M.L.A.	Minister for Mines, Electricity, and Fuel
Hon. Colin John Jamieson, M.L.A.	Minister for Works, Water Supplies, and Traffic Safety
Hon. Hywel David Evans, B.A., M.L.A.	Minister for Lands, Agriculture, and Forests
Hon. Ronald Davies, M.L.A.	Minister for Environmental Protection, Health, and Town Planning
Hon. Robert Henry Claude Stubbs, M.L.C.	Minister for Local Government, and Chief Secretary
Hon. Arthur William Bickerton, M.L.A.	Minister for Housing, Fisheries and Fauna, and the North-West
Hon. Ronald Thompson, M.L.C.	Minister for Police, Community Welfare, and Tourism
Hon. John Joseph Harman, M.L.A.	Minister for Labour, Immigration, Prices Control, and Consumer Protection

(a) The reconstituted Ministry from 30 May 1973.

The Constitution Act of 1889 provided for a Ministry of five members. This number was increased to six by an amendment to the Act in 1896, to eight by another amendment in 1927, and to ten by the *Acts Amendment (Increase in Number of Ministers of the Crown) Act, 1950*. The present Ministry consists of twelve members, as authorised by the *Constitution Acts Amendment Act, 1965*. The names of the Ministers and the portfolios held by them at 31 December 1973 are shown in the previous table.

The right to vote at parliamentary elections was extended to women by the *Constitution Acts Amendment Act, 1899* and membership of either House was provided for by the *Parliament (Qualification of Women) Act, 1920*. The first woman member of any Australian Parliament was Mrs Edith Dircksey Cowan, O.B.E., who was elected to the Legislative Assembly in March 1921 as member for West Perth. Mrs A. F. G. (later Dame Florence) Cardell-Oliver, M.L.A. for Subiaco, became the first woman Cabinet Minister in Australia when she joined the McLarty Ministry in 1947.

Payment of members was introduced in 1900 by a Payment of Members Act and a superannuation fund is established under the *Parliamentary Superannuation Act, 1970-1971*. The latter Act replaces the *Parliamentary Superannuation Act, 1948-1968* which came into operation on 1 January 1949.

The Legislative Council

The Legislative Council consists of thirty members, each of the fifteen electoral provinces into which the State is divided being represented by two members. Election is for a term of six years and one-half of the members retire every three years.

The qualifications of a candidate for election to the Legislative Council are that he or she shall be at least eighteen years of age, shall have resided in Western Australia for a minimum of one year, be a natural-born or naturalised British subject, and be enrolled, or qualified for enrolment, as an elector. No person may hold office as a Member of the Legislative Council and a Member of the Legislative Assembly at the same time. A Judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt, a debtor against whose estate there is a subsisting order in bankruptcy, or a person who has been attainted or convicted of treason or felony may not be elected to the Legislative Council. The qualifications for election as a Member of the Legislative Council are thus identical with those necessary for election as a Member of the Legislative Assembly. The qualifying age for a candidate for election to either House was reduced from twenty-one years of age to eighteen years of age under the provisions of the *Constitution Acts Amendment Act, 1973* which was proclaimed operative from 1 January 1974.

The *Electoral Act, 1907-1973* requires that to qualify for enrolment as an elector a person shall be at least eighteen years of age, be a natural-born or naturalised British subject, shall have lived in the Commonwealth of Australia for six months continuously, and shall have lived in Western Australia for three months continuously and in the district for which he claims enrolment for a continuous period of one month immediately preceding the date of his claim. The qualifying age for enrolment as an elector for both the Legislative Council and the Legislative Assembly was reduced from twenty-one years of age to eighteen years of age under the provisions of the *Electoral Act Amendment Act (No. 2), 1970*. The Act operated for the first time at the conjoint election for the Legislative Council and the Legislative Assembly held on 20 February 1971. A person is disqualified from enrolment if he is of unsound mind, has been attainted of treason, has been convicted and is serving sentence for any offence punishable by imprisonment for one year or longer, is the holder of a temporary entry permit for the purposes of the *Migration Act 1958-1973* (Commonwealth) or is a prohibited immigrant under that Act. Enrolment is compulsory under the *Electoral Act Amendment Act, 1964* for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting at elections is on the preferential system and, as provided by the foregoing Act, is compulsory for all enrolled persons.

Under the *Electoral Districts Act, 1947-1965*, the State is divided into a Metropolitan Area, consisting of five electoral provinces, an Agricultural, Mining and Pastoral Area

with eight provinces, and a North-West-Murchison-Eyre Area with two provinces. The names and boundaries of these fifteen electoral provinces, together with those of the fifty-one component electoral districts, were given in the 1969 issue of the Year Book. Changes in these boundaries were found necessary following an examination of the rolls prepared for the election of 20 February 1971 and, by proclamation dated 1 September 1971, Electoral Commissioners appointed under the Act were directed to wholly or partially redivide the State into electoral districts and electoral provinces in the manner provided by the Act.

The proposals of the Commissioners were published in an issue of the *Government Gazette of Western Australia* dated 21 January 1972. After considering objections submitted, the Commissioners made their final report on 1 June 1972. This report, together with maps showing the final recommendations of the Commissioners for the division of the State into electoral districts and for the adjustment of the boundaries of the electoral provinces, was published in the *Government Gazette of Western Australia* dated 14 June 1972. Details of the electoral districts, as finally determined, contained within each province appeared in the *Appendix* of the previous issue of the Year Book.

The composition of the Legislative Council at 31 December 1973 is given in the following table.

MEMBERS OF THE LEGISLATIVE COUNCIL AT 31 DECEMBER 1973

Name	Political party	Electoral province
DUE TO RETIRE IN 1974 (a)		
Berry, Hon. George William	Lib.	Lower North
Cloughton, Hon. Roy Frederick, B.A.	A.L.P.	North Metropolitan
Diver, Hon. Leslie Charles	C.P.	Central
Dolan, Hon. John	A.L.P.	South-East Metropolitan
Hunt, Hon. John Leslie	A.L.P.	North
Logan, Hon. Leslie Arthur	C.P.	Upper West
MacKinnon, Hon. Graham Charles	Lib.	Lower West
Medcalf, Hon. Ian George, E.D., LL.B.	Lib.	Metropolitan
Stubbs, Hon. Robert Henry Claude	A.L.P.	South-East
Thompson, Hon. Ronald	A.L.P.	South Metropolitan
Thompson, Hon. Sydney Thomas Joseph	C.P.	Lower Central
Thomson, Hon. Jack McIntosh	C.P.	South
Willesee, Hon. William Francis	A.L.P.	North-East Metropolitan
Willmott, Hon. Francis Drake	Lib.	South-West
vacant (b)	....	West
DUE TO RETIRE IN 1977 (a)		
Abbey, Hon. Charles Roy	Lib.	West
Baxter, Hon. Norman Eric	C.P.	Central
Dans, Hon. Desmond Keith	A.L.P.	South Metropolitan
Dellar, Hon. Stanley James	A.L.P.	Lower North
Elliott, Hon. Lyla Daphne	A.L.P.	North-East Metropolitan
Ferry, Hon. Victor Jasper, D.F.C.	Lib.	South-West
Griffith, Hon. Arthur Frederick	Lib.	North Metropolitan
Griffiths, Hon. Clive Edward	Lib.	South-East Metropolitan
Heitman, Hon. Jack	Lib.	Upper West
Leeson, Hon. Ronald Thomas	A.L.P.	South-East
McNeill, Hon. Neil, B.Sc. (Agric.)	Lib.	Lower West
Perry, Hon. Thomas Oswald	C.P.	Lower Central
Williams, Hon. Richard John Lloyd, B.A.	Lib.	Metropolitan
Withers, Hon. William Robert, J.P.	Lib.	North
Wordsworth, Hon. David John	Lib.	South

(a) Section 8 of the *Constitution Acts Amendment Act, 1899-1973* provides that a retiring member shall vacate his seat on 21 May in the year of retirement. (b) Vacant due to the death of the Hon. F. R. White on 19 October 1973.

The Legislative Assembly

The following table shows the composition of the Legislative Assembly at 31 December 1973.

MEMBERS OF THE LEGISLATIVE ASSEMBLY AT 31 DECEMBER 1973

Name	Political party	Electoral district
Bateman, Thomas Henry	A.L.P.	Canning
Bertram, Ronald Edward, A.A.S.A.	A.L.P.	Mount Hawthorn
Bickerton, Hon. Arthur William	A.L.P.	Pilbara
Blaikie, Barry Roy	Lib.	Vasse
Brady, John Joseph	A.L.P.	Swan
Brand, Hon. Sir David, K.C.M.G.	Lib.	Greenough
Brown, James McMillan	A.L.P.	Merredin-Yilgarn
Bryce, Malcolm John, B.A.	A.L.P.	Ascot
Burke, Brian Thomas (a)	A.L.P.	Balcatta
Burke, Terence Joseph	A.L.P.	Perth
Cook, Wyndham Truran	A.L.P.	Albany
Court, Hon. Sir Charles, O.B.E.	Lib.	Nedlands
Coyne, Peter Joseph Aloysius	Lib.	Murchison-Eyre
Dadour, Dr Gabriel Thomas, M.B., B.S.	Lib.	Subiaco
Davies, Hon. Ronald	A.L.P.	Victoria Park
Evans, Hon. Hywel David, B.A.	A.L.P.	Warren
Evans, Hon. Thomas Daniel....	A.L.P.	Kalgoorlie
Fletcher, Harry Arthur	A.L.P.	Fremantle
Gayfer, Harry Walter....	C.P.	Avon
Grayden, William Leonard	Lib.	South Perth
Harman, Hon. John Joseph	A.L.P.	Maylands
Hartrey, Thomas Augustine, B.A., LL.B.	A.L.P.	Boulder-Dundas
Hutchinson, Hon. Ross, D.F.C.	Lib.	Cottesloe
Jamieson, Hon. Colin John	A.L.P.	Belmont
Jones, Thomas Henry	A.L.P.	Collie
Lapham, Stanley Edward, A.A.S.A.	A.L.P.	Karrinyup
Lewis, Alexander Ashley	Lib.	Blackwood
Lewis, Hon. Edgar Henry Mead	C.P.	Moore
Manning, Iven Wemyss	Lib.	Wellington
Manning, William Allan, A.A.S.A., A.C.I.S.	C.P.	Narrogin
May, Hon. Donald George	A.L.P.	Clontarf
McIver, Kenneth Finlay	A.L.P.	Northam
McPharlin, Walter Raymond	C.P.	Mount Marshall
Mensaros, Andrew	Lib.	Floreat
Moller, James	A.L.P.	Toodyay
Nalder, Hon. Crawford David	C.P.	Katanning
Norton, Hon. Daniel	A.L.P.	Gascoyne
O'Connor, Hon. Raymond James	Lib.	Mount Lawley
O'Neil, Hon. Desmond Henry	Lib.	East Melville
Ridge, Keith Alan	Lib.	Kimberley
Runciman, Ewart	Lib.	Murray
Rushton, Edgar Cyril	Lib.	Dale
Sewell, William Hawkins	A.L.P.	Geraldton
Sibson, John (b)	Lib.	Bunbury
Stephens, Matthew Ernest	C.P.	Stirling
Taylor, Hon. Alexander Donald, B.A.	A.L.P.	Cockburn
Thompson, Ian David	Lib.	Darling Range
Tonkin, Arthur Raymond, B.A., Dip.Ed.	A.L.P.	Mirrabooka
Tonkin, Hon. John Trezise	A.L.P.	Melville
Young, Raymond Laurence, F.C.A.	Lib.	Wembley
Young, William Gordon	C.P.	Roe

SUMMARY

Australian Labor Party (A.L.P.)	....	26
Country Party (C.P.)	....	7
The Liberal Party of Australia (Western Australian Division) Incorporated (Lib.)	....	18

(a) Elected at a by-election held 28 July 1973 to fill the vacancy caused by the resignation of the Hon. H. E. Graham on 30 May 1973. (b) Elected at a by-election held 7 April 1973 to fill the vacancy caused by the resignation of Mr M. C. Williams on 28 February 1973.

There are fifty-one members of the Legislative Assembly, each member representing one of the fifty-one electoral districts into which the State is divided for the purpose. Members are elected for the duration of the Parliament, which is limited to three years.

A candidate for election must have resided in Western Australia for twelve months, be at least eighteen years of age, be a natural-born or naturalised British subject, and be enrolled or qualified for enrolment, as an elector at Legislative Assembly elections. No person is qualified to be a Member of the Legislative Assembly if he is a member of the Legislative Council, a Judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt, a debtor against whose estate there is a subsisting order in bankruptcy, or has been attainted or convicted of treason or felony.

The qualifications and disqualifications applying to enrolment as an elector of the Legislative Assembly are the same as those prescribed for electors of the Legislative Council and enumerated in the preceding section *The Legislative Council*. As provided by the *Electoral Amendment Act, 1919* enrolment is compulsory for all qualified persons except those who are aboriginal natives of Australia. Aborigines, although entitled to enrol, are not required to do so. Voting at elections is on the preferential system and is compulsory for all enrolled persons as provided by the *Electoral Act Amendment Act, 1936*.

ELECTIONS, ELECTORS ON ROLL AND VOTES RECORDED

The Federal Parliament

General elections for the House of Representatives were held on 2 December 1972. The Australian Labor Party, led by E. G. Whitlam, Q.C., was elected to office with a majority of nine seats.

Elections for the Senate took place on 21 November 1970. As a result, Australian Labor Party representation in the Senate from 1 July 1971 was reduced from twenty-seven to twenty-six.

FEDERAL PARLIAMENT—ELECTORS ON ROLL AND VOTES RECORDED

Electoral division	Electors enrolled	First preference votes recorded							Number of voters	
		Liberal Party of Australia	Australian Country Party	Australian Labor Party	Australian Democratic Labor Party	Australia Party	Independent and other	Informal	Total	Per cent of enrolled electors
Canning	64,865	15,873	15,461	23,398	1,558	1,436	1,301	2,335	61,362	94.60
Curtin	54,299	29,131	(a)	15,373	2,634	2,652	(a)	1,037	50,827	93.61
Forrest	51,020	15,304	9,723	20,843	1,483	455	(a)	1,143	48,951	95.94
Fremantle	62,769	22,637	(a)	32,803	1,764	(a)	786	1,515	59,505	94.80
Kalgoorlie	51,968	15,837	(a)	26,648	2,801	(a)	(a)	1,182	46,468	89.43
Moore	58,554	15,197	15,647	21,074	2,480	(a)	(a)	1,380	55,778	95.26
Perth	61,410	23,911	(a)	28,226	2,928	(a)	(a)	1,623	56,688	92.31
Stirling	69,511	30,446	(a)	29,686	4,243	(a)	(a)	1,414	65,789	94.65
Swan	62,844	24,724	(a)	28,347	2,163	1,075	921	1,699	58,929	93.77
Total, Western Australia	537,240	193,060	40,831	226,398	22,054	5,618	3,008	13,328	504,297	93.87

HOUSE OF REPRESENTATIVES—GENERAL ELECTION OF 2 DECEMBER 1972

Canning	64,865	15,873	15,461	23,398	1,558	1,436	1,301	2,335	61,362	94.60
Curtin	54,299	29,131	(a)	15,373	2,634	2,652	(a)	1,037	50,827	93.61
Forrest	51,020	15,304	9,723	20,843	1,483	455	(a)	1,143	48,951	95.94
Fremantle	62,769	22,637	(a)	32,803	1,764	(a)	786	1,515	59,505	94.80
Kalgoorlie	51,968	15,837	(a)	26,648	2,801	(a)	(a)	1,182	46,468	89.43
Moore	58,554	15,197	15,647	21,074	2,480	(a)	(a)	1,380	55,778	95.26
Perth	61,410	23,911	(a)	28,226	2,928	(a)	(a)	1,623	56,688	92.31
Stirling	69,511	30,446	(a)	29,686	4,243	(a)	(a)	1,414	65,789	94.65
Swan	62,844	24,724	(a)	28,347	2,163	1,075	921	1,699	58,929	93.77
Total, Western Australia	537,240	193,060	40,831	226,398	22,054	5,618	3,008	13,328	504,297	93.87

SENATE—ELECTION OF 21 NOVEMBER 1970

Canning	56,597	9,090	12,044	19,216	2,425		6,348	4,056	53,179	93.96
Curtin	52,970	17,744	4,620	14,102	2,567		7,662	3,047	49,742	93.91
Forrest	50,292	12,232	7,030	19,153	2,685		3,814	3,205	48,119	95.68
Fremantle	60,135	12,165	5,434	26,286	2,202		6,164	3,920	56,171	93.41
Kalgoorlie	46,459	10,399	4,011	17,648	2,405	(a)	2,611	3,533	40,607	87.40
Moore	50,568	7,758	11,608	16,820	2,194		5,658	3,355	47,393	93.72
Perth	58,016	13,325	4,540	22,264	3,114		5,340	5,299	53,882	92.87
Stirling	61,704	14,658	4,915	24,126	3,032		6,757	4,152	57,640	93.41
Swan	60,325	12,519	5,214	25,033	3,314		5,590	4,595	56,265	93.26
Total, Western Australia	497,066	109,890	59,416	184,648	23,938	....	49,944	35,162	462,998	93.15

(a) No candidate.

STATE PARLIAMENT—LEGISLATIVE COUNCIL AND LEGISLATIVE ASSEMBLY
CONJOINT ELECTION OF 20 FEBRUARY 1971 (a)

LEGISLATIVE COUNCIL

Electoral area (b) and province	Electors on roll			Electoral area (b) and province	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Metropolitan	30,365	35,579	65,944	Pastoral Area (con-			
North Metropolitan	38,529	41,354	79,883	tinued)—			
North-East Metropolitan				South-East	10,922	9,572	20,494
tan	37,610	39,209	76,819	South-West	9,989	9,426	19,415
South Metropolitan	30,897	31,664	62,561	Upper West	11,912	10,725	22,637
South-East Metropolitan	29,929	33,170	63,099	West	15,184	15,074	30,258
Total	167,330	180,976	348,306	Total	90,545	84,720	175,265
Agricultural, Mining and				North-West-Murchison-			
Pastoral Area—				Eyre Area—			
Central	9,951	8,960	18,911	Lower North	2,857	2,268	5,125
Lower Central	9,580	8,972	18,552	North	4,717	3,709	8,426
Lower West	11,336	11,192	22,528	Total	7,574	5,977	13,551
South	11,671	10,799	22,470	WHOLE STATE	265,449	271,673	537,122
Votes recorded—							
Formal							464,827
Informal							25,084
Total					(c)	(c)	489,911
Percentage of electors who voted (d)							91.21
Percentage of informal votes (e)							5.12

LEGISLATIVE ASSEMBLY

Electoral area (b) and district	Electors on roll			Electoral area (b) and district	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Ascot	7,053	7,219	14,272	Pastoral Area (con-			
Balcatta	9,993	10,276	20,269	tinued)—			
Belmont	7,259	7,483	14,742	Collie	2,992	2,811	5,803
Canning	10,526	10,820	21,346	Dale	6,224	6,196	12,420
Clontarf	7,054	8,087	15,141	Darling Range	5,049	5,236	10,285
Cockburn	9,949	9,817	19,766	Geraldton	3,890	3,814	7,704
Cottesloe	6,438	7,590	14,028	Greenough	3,904	3,302	7,206
East Melville	7,929	8,543	16,472	Kalgoorlie	3,417	3,064	6,481
Floreat	6,569	7,115	13,684	Katanning	3,225	3,005	6,230
Fremantle	6,270	6,328	12,598	Merredin-Yilgarn	4,036	3,407	7,443
Karrinyup	7,634	8,227	15,861	Moore	4,118	3,609	7,727
Maylands	6,196	6,920	13,116	Mount Marshall	3,441	2,975	6,416
Melville	6,749	6,976	13,725	Murray	4,162	4,108	8,270
Mirrabooka	9,560	9,919	19,479	Narrogin	3,363	3,156	6,519
Mount Hawthorn	6,656	7,141	13,797	Northam	3,277	3,108	6,385
Mount Lawley	6,485	7,511	13,996	Roe	4,624	3,960	8,584
Nedlands	6,037	7,242	13,279	Stirling	3,823	3,467	7,290
Perth	5,599	5,974	11,573	Toodyay	3,911	3,642	7,553
South Perth	6,058	7,282	13,340	Vasse	3,304	3,357	6,661
Subiaco	5,722	7,658	13,380	Warren	3,529	3,144	6,673
Swan	7,542	7,668	15,210	Wellington	3,504	3,331	6,835
Victoria Park	6,291	6,981	13,272	Total	90,545	84,720	175,265
Wembley	7,761	8,199	15,960	North-West-Murchison-			
Total	167,330	180,976	348,306	Eyre Area—			
Agricultural, Mining and				Gascoyne	1,775	1,510	3,285
Pastoral Area—				Kimberley	1,774	1,374	3,148
Albany	3,224	3,372	6,596	Murchison-Eyre	1,082	758	1,840
Avon	3,233	2,877	6,110	Pilbara	2,943	2,335	5,278
Blackwood	3,156	2,925	6,081	Total	7,574	5,977	13,551
Boulder-Dundas	3,469	3,101	6,570	WHOLE STATE	265,449	271,673	537,122
Bunbury	3,670	3,753	7,423				
Votes recorded—							
Formal							471,570
Informal							18,897
Total					(c)	(c)	490,467
Percentage of electors who voted (d)							91.31
Percentage of informal votes (e)							3.85

(a) Details of the subsequent election held on 30 March 1974 appear in the Appendix. (b) As defined in the Electoral Districts Act, 1947–1965. (c) Not available. (d) Proportion of votes recorded to electors on roll. (e) Proportion of informal votes to total votes recorded.

The State Parliament

At the conjoint election for the Legislative Council and the Legislative Assembly held on 20 February 1971, the Australian Labor Party, led by the Honourable J. T. Tonkin, was elected to office with a majority in the Legislative Assembly of one seat. The strength of the Australian Labor Party in the Legislative Council, where it was in a minority, remained unchanged with ten seats. Results of the 1974 conjoint election are given in the *Appendix*.

The table on page 103 shows the number of electors enrolled in each Province and in each District in 1971. The numbers of formal and informal votes recorded throughout the State at the election are also shown.

It will be seen from the table that the number of electors enrolled in each District in the Metropolitan Area was approximately twice the number in each District in the Agricultural, Mining and Pastoral Area. This is accounted for by a requirement of the *Electoral Districts Act, 1947-1965* that the Electoral Commissioners, in determining the quota of electors for each District, should reckon every two electors in the Metropolitan Area as one elector, at the same time giving full representation to each elector in the Agricultural, Mining and Pastoral Area. The number of Districts in the North-West-Murchison-Eyre Area was fixed by the Act at four.

LEGISLATION DURING 1972

The Federal Parliament

The legislative enactments of the Commonwealth Parliament in 1972 are listed in summarised form on pages 79-84 of the *Official Year Book of Australia*, No. 59—1973 issued by the Commonwealth Statistician, Canberra.

The State Parliament

During the third session of the twenty-seventh Parliament, which lasted from 14 March to 2 June 1972, and from 1 August to 24 November 1972, the Western Australian legislature enacted 110 Public Statutes and, in addition, dealt with thirty-three Bills which were introduced but not passed.

The titles and a brief summary of the Acts passed by the State Parliament during 1972 (*i.e.* those enacted during the periods specified in the previous paragraph) are given below. The full text of the legislation enacted is contained in the volumes of *The Acts of the Parliament of Western Australia*, to which reference should be made if further details are required.

ACTS PASSED DURING 1972

No. of Act	Short title and summary
24	Aboriginal Affairs Planning Authority Act. Provides for the establishment of an Aboriginal Affairs Planning Authority, a Commissioner for Aboriginal Planning and an Aboriginal Affairs Advisory Council for providing consultative and other services and for the economic, social and cultural advancement of persons of Aboriginal descent in Western Australia. Repeals the <i>Native Welfare Act, 1963</i> .
53	Aboriginal Heritage Act. Provides for the preservation of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith.
91	Acts Amendment (Judicial Salaries and Pensions) Act. Amends subsection 1 of section 5 of the <i>Judges' Salaries and Pensions Act, 1950-1972</i> and subsection 1 of section 12 of the <i>District Court of Western Australia Act, 1969-1972</i> .
67	Acts Amendment (Roman Catholic Church Lands) Act. Amends the <i>Roman Catholic Church Lands Amendment Act, 1902</i> , the <i>Roman Catholic Church Property Act, 1911</i> , the <i>Roman Catholic Church Property Act Amendment Act, 1912</i> and the <i>Roman Catholic Church Property Acts Amendment Act, 1916</i> .
46	Age of Majority Act. Provides that persons aged eighteen years or more shall have full legal capacity. Repeals the <i>Housing Advances (Contracts with Infants) Act, 1968</i> . Makes consequential amendments to twelve specified Acts.

ACTS PASSED DURING 1972—*continued*

No. of Act	Short title and summary
47	Alumina Refinery Agreement Act Amendment Act. Amends the <i>Alumina Refinery Agreement Act, 1961–1967</i> by approving the fourth supplementary agreement between the State and Alcoa of Australia (W.A.) Limited.
60	Alumina Refinery (Mitchell Plateau) Agreement Act Amendment Act. Amends the <i>Alumina Refinery (Mitchell Plateau) Agreement Act, 1971</i> by ratifying a variation agreement between the State and Amax Bauxite Corporation.
97	Alumina Refinery (Muchea) Agreement Act. Authorises the execution on behalf of the State of an Agreement with Hancock Prospecting Pty. Ltd., Wright Prospecting Pty. Ltd., Metals Miniere Limited and Pacminex (Operations) Pty. Limited relating to the establishment near Muchea of a refining plant to treat bauxite to produce alumina. Repeals the <i>Alumina Refinery (Upper Swan) Agreement Act, 1971</i> .
48	Alumina Refinery (Pinjarra) Agreement Act Amendment Act. Amends the <i>Alumina Refinery (Pinjarra) Agreement Act, 1969</i> by ratifying a supplementary agreement between the State and Alcoa of Australia (W.A.) Limited.
110	Appropriation Act (Consolidated Revenue Fund).
109	Appropriation Act (General Loan Fund).
50	Auctioneers Act Amendment Act. Amends section 11 of the <i>Auctioneers Act, 1921–1970</i> .
6	Bee Industry Compensation Act Amendment Act. Amends section 9 and subsection 1 of sections 10 and 11 of the <i>Bee Industry Compensation Act, 1953–1963</i> .
5	Beekeepers Act Amendment Act. Amends section 8 of the <i>Beekeepers Act, 1963</i> .
45	Bulk Handling Act Amendment Act. Adds section 50A to the <i>Bulk Handling Act, 1967–1971</i> .
27	Child Welfare Act Amendment Act (No. 2). Amends the <i>Child Welfare Act, 1947–1971</i> .
79	Coal Mine Workers (Pensions) Act Amendment Act. Amends the <i>Coal Mine Workers (Pensions) Act, 1943–1971</i> .
31	Community Welfare Act. Provides for the establishment of a Department for Community Welfare, to promote individual and family welfare in the community.
80	Companies Act Amendment Act (No. 2). Amends section 80 of the <i>Companies Act, 1961–1971</i> .
9	Constitution Acts Amendment Act. Amends section 41A of the <i>Constitution Acts Amendment Act, 1899–1969</i> .
13	Construction Safety Act. Provides for the safety and welfare of persons engaged in construction and other work.
102	Contraceptives Act Amendment Act. Amends section 2 and repeals section 4 of the <i>Contraceptives Act, 1939</i> .
62	Country High School Hostels Authority Act Amendment Act. Amends subsection 4 of section 12 of the <i>Country High School Hostels Authority Act, 1960–1967</i> .
21	Criminal Code Amendment Act. Amends The Criminal Code set out in the Schedule to the <i>Criminal Code Act, 1913</i> .
41	Criminal Code Amendment Act (No. 2). Repeals and re-enacts section 322 and paragraph (f) of subsection 1 of section 426 and adds section 451B to The Criminal Code.
108	Dentists Act Amendment Act. Amends the <i>Dentists Act, 1939–1970</i> .
40	District Court of Western Australia Act Amendment Act. Amends the <i>District Court of Western Australia Act, 1969–1970</i> .
85	Dog Act Amendment Act. Adds section 18A to the <i>Dog Act, 1903–1967</i> .
3	Education Act Amendment Act. Amends subsection 2 of section 9B of the <i>Education Act, 1928–1970</i> .
89	Education Act Amendment Act (No. 3). Repeals Part IV and amends sections 1A, 3, 28 and 37AE of the <i>Education Act, 1928–1972</i> .
61	Environmental Protection Act Amendment Act. Amends section 21 of the <i>Environmental Protection Act, 1971</i> .
65	Factories and Shops Act Amendment Act. Amends the <i>Factories and Shops Act, 1963–1970</i> .
107	Fire Brigades Act Amendment Act. Repeals section 32 and amends section 37 of the <i>Fire Brigades Act, 1942–1971</i> .
99	Fruit-growing Reconstruction Scheme Act. Approves and gives effect to an agreement between the Commonwealth and the State providing for the establishment and operation of a scheme of financial assistance to persons engaged in fruit-growing in Western Australia.
56	Fuel, Energy and Power Resources Act. Provides for the conservation and utilisation of the present and future sources and supplies of fuel, energy and power in and to Western Australia. Establishes the Fuel and Power Commission of Western Australia and the Fuel and Power Advisory Council and details their respective functions.
15	Gas Standards Act. Regulates the standards of quality, pressure, purity and safety of gas supplied to consumers and the standards and safety of undertakers' and consumers' installations. Repeals the <i>Gas (Standards) Act, 1947–1956</i> .
16	Gas Undertakings Act Amendment Act. Amends section 25 of the <i>Gas Undertakings Act, 1947–1961</i> .

ACTS PASSED DURING 1972—continued

No. of Act	Short title and summary
74	Gold Buyers Act Amendment Act. Amends section 7 of the <i>Gold Buyers Act, 1921–1961</i> .
72	Government Railways Act Amendment Act. Amends sections 24 and 52 of the <i>Government Railways Act, 1904–1971</i> .
83	Greyhound Racing Control Act. Establishes a Greyhound Racing Control Board. Defines the general powers and functions of the Board.
77	Guardianship of Children Act. Consolidates and amends the law relating to the guardianship and custody of children. Repeals the Guardianship of Infants Act of 1920 and 1926 and the Guardianship of Infants Act Amendment Act of 1939, 1948, 1954, 1962 and 1965.
66	Hairdressers Registration Act Amendment Act. Amends sections 5 and 21 of the <i>Hairdressers Registration Act, 1946–1968</i> .
33	Hospitals Act Amendment Act. Amends the <i>Hospitals Act, 1927–1969</i> . Establishes a Teaching Hospitals Advisory Council.
8	Housing Loan Guarantee Act Amendment Act. Amends subsection 1 of section 7B of the <i>Housing Loan Guarantee Act, 1957–1968</i> .
98	Indecent Publications Act Amendment Act. Amends the <i>Indecent Publications Act, 1902–1967</i> . Constitutes a State Advisory Committee on Publications.
70	Industrial Lands Development Authority Act Amendment Act. Amends section 6 and repeals section 7 of the <i>Industrial Lands Development Authority Act, 1966–1971</i> .
57	Inheritance (Family and Dependents Provision) Act. Provides for the maintenance and support of the family and dependants of deceased persons out of the assets of the deceased's estate. Declares that, on the coming into operation of this Act, the <i>Testator's Family Maintenance Act, 1939–1962</i> is repealed.
64	Interpretation Act Amendment Act. Amends section 4 of the <i>Interpretation Act, 1918–1970</i> .
30	Iron Ore (Goldsworthy-Nimngarra) Agreement Act. Ratifies an Agreement between the State and Consolidated Gold Fields Australia Limited, Cyprus Mines Corporation and Utah Development Company as Joint Venturers relating to the exploration for, and development of, iron ore in certain areas in the north-west of the State.
39	Iron Ore (Hammersley Range) Agreement Act Amendment Act. Amends the <i>Iron Ore (Hammersley Range) Agreement Act, 1963–1968</i> by approving the third supplementary agreement between the State and Hammersley Iron Pty. Limited.
104	Iron Ore (McCamey's Monster) Agreement Authorization Act. Authorises the execution on behalf of the State of an Agreement with Consolidated Gold Fields Australia Limited, Cyprus Mines Corporation, Utah Development Company, Hancock Prospecting Pty. Ltd., Wright Prospecting Pty. Ltd. and M.I.M. Holdings Limited as Joint Venturers relating to the exploration for and the development and treatment of iron ore.
37	Iron Ore (Mount Bruce) Agreement Act. Ratifies an Agreement between the State and Mount Bruce Mining Pty. Limited relating to the exploration for, and the development and treatment of, iron ore in certain areas of the north-west of the State and the production of steel in the State.
36	Iron Ore (Rhodes Ridge) Agreement Authorization Act. Authorises the execution on behalf of the State of an Agreement with Rhodes Ridge Mining Co. Ltd., Hancock Prospecting Pty. Ltd., Wright Prospecting Pty. Ltd., and Texas Gulf Inc. as Joint Venturers relating to the exploration for, and the development and treatment of, iron ore.
38	Iron Ore (Wittenoom) Agreement Act. Ratifies an Agreement made between the State and Hancock Prospecting Pty. Ltd. and Wright Prospecting Pty. Ltd. as Joint Venturers relating to iron ore.
18	Judges' Salaries and Pensions Act Amendment Act. Adds section 8B to the <i>Judges' Salaries and Pensions Act, 1950–1970</i> .
17	Justices Act Amendment Act. Amends the <i>Justices Act, 1902–1971</i> .
55	Land Agents Act Amendment Act. Amends subsection 2b of section 4 of the <i>Land Agents Act, 1921–1969</i> .
73	Land Drainage Act Amendment Act. Amends subsection 2 of section 60 and adds sections 65A and 164A to the <i>Land Drainage Act, 1925–1954</i> .
59	Law Reform Commission Act. Establishes the Law Reform Commission of Western Australia and specifies its functions.
10	Legal Contribution Trust Act Amendment Act. Amends the <i>Legal Contribution Trust Act, 1967–1969</i> .
76	Liquor Act Amendment Act. Amends the <i>Liquor Act, 1970</i> .
106	Loan Act. Authorises the raising of \$67,090,000 by loan for the construction of certain public works and for other purposes.
81	Local Government Act Amendment Act (No. 3). Amends the <i>Local Government Act, 1960–1971</i> .
105	Lotteries (Control) Act Amendment Act. Amends section 18 of the <i>Lotteries (Control) Act, 1954–1970</i> .

ACTS PASSED DURING 1972—continued

No. of Act	Short title and summary
35	Main Roads Act Amendment Act. Amends the <i>Main Roads Act, 1930–1969</i> .
88	Married Persons and Children (Summary Relief) Act Amendment Act. Amends the <i>Married Persons and Children (Summary Relief) Act, 1965–1967</i> .
49	Mental Health Act Amendment Act. Amends subsection 1 of section 30 of the <i>Mental Health Act, 1962–1968</i> .
94	Metric Conversion Act. Facilitates the use of the metric system of measurement by amending certain references to physical quantities in certain Acts. Authorises the amendment, by proclamation or notice, of other such references in Acts and other statutory instruments.
43	Metropolitan Water Supply, Sewerage, and Drainage Act Amendment Act. Amends the <i>Metropolitan Water Supply, Sewerage, and Drainage Act, 1909–1970</i> .
42	Motor Vehicle (Third Party Insurance) Act Amendment Act. Abolishes the Third Party Claims Tribunal and amends the <i>Motor Vehicle (Third Party Insurance) Act, 1943–1971</i> .
100	Noise Abatement Act. Controls excessive noise and vibration and provides for their abatement. Establishes the Noise and Vibration Control Council and the Noise Abatement Advisory Committee.
51	Noxious Weeds Act Amendment Act. Amends the <i>Noxious Weeds Act, 1950–1971</i> .
4	Parks and Reserves Act Amendment Act. Amends section 5 and subsection 2 of section 8 of the <i>Parks and Reserves Act, 1895–1963</i> .
82	Parliamentary Salaries and Allowances Act Amendment Act. Amends subsection 2 of section 4 and section 7 of the <i>Parliamentary Salaries and Allowances Act, 1967</i> .
101	Perth Regional Railway Act. Authorises the discontinuance of portion of the railway from Fremantle to Guildford and the construction of the Perth Regional Railway, comprised of two parts.
11	Pig Industry Compensation Act Amendment Act. Amends the <i>Pig Industry Compensation Act, 1942–1970</i> .
7	Police Act Amendment Act. Amends sections 61, 65 and 75 of the <i>Police Act, 1892–1970</i> .
2	Presbyterian Church of Australia Act Amendment Act. Amends section 3 and subsection 1 of section 4 of the <i>Presbyterian Church of Australia Act, 1970</i> .
84	Prevention of Cruelty to Animals Act Amendment Act. Amends subsection 1 of section 4 of the <i>Prevention of Cruelty to Animals Act, 1920–1970</i> .
63	Public and Bank Holidays Act. Rationalises public and bank holidays. Repeals the <i>Anzac Day Act, 1919</i> , the <i>Anniversary of the Birthday of the Reigning Sovereign Act, 1937</i> and the <i>Bank Holidays Act, 1970</i> .
23	Public Service Act Amendment Act. Amends section 52 of the <i>Public Service Act, 1904–1970</i> .
28	Public Trustee Act Amendment Act. Amends subsection 2 of section 38 and subsection 4 of section 40 of the <i>Public Trustee Act, 1941–1968</i> .
19	Public Works Act Amendment Act. Amends the <i>Public Works Act, 1902–1967</i> .
86	Racing Restriction Act Amendment Act. Repeals and re-enacts section 3 and amends section 5 of the <i>Racing Restriction Act, 1917</i> as amended by the <i>Racing Restriction Act Amendment Act, 1925</i> .
96	Reserve (Concert Hall) Act. Alters the purposes of Reserve No. 30347 comprising Perth Lot 853, and provides that parts of the reserve may be used for the sale and supply of liquor.
95	Reserves and Road Closure Act. Varies the provisions relating to certain reserves and other lands and closes portion of a private road at Mount Hawthorn.
78	Reserves (University Lands) Act. Enables certain lands to be reserved as the proposed site for the Murdoch University.
32	Stamp Act Amendment Act. Amends the <i>Stamp Act, 1921–1971</i> .
22	State Housing Act Amendment Act. Amends the <i>State Housing Act, 1946–1969</i> .
25	State Trading Concerns Act Amendment Act. Amends section 7A of the <i>State Trading Concerns Act, 1916–1968</i> .
75	Stock (Brands and Movement) Act Amendment Act. Amends the <i>Stock (Brands and Movement) Act, 1970</i> .
44	Supply Act. Grants supply of \$235 million for the year 1972–73.
93	Teacher Education Act. Provides for the continuing development of teacher education. Establishes the Western Australian Teacher Education Authority.
87	Totalisator Agency Board Betting Act Amendment Act (No. 2). Amends the <i>Totalisator Agency Board Betting Act, 1960–1970</i> .
103	Totalisator Agency Board Betting Act Amendment Act (No. 3). Amends the <i>Totalisator Agency Board Betting Act, 1960–1972</i> .
68	Totalisator Duty Act Amendment Act. Amends sections 2, 4 and 7 of the <i>Totalisator Duty Act, 1905–1970</i> .
69	Totalisator Regulation Act Amendment Act. Amends section 2 of the <i>Totalisator Regulation Act, 1911</i> .

ACTS PASSED DURING 1972—*continued*

No. of Act	Short title and summary
34	Town Planning and Development Act Amendment Act. Amends section 20 and subsection 5 of section 28A and adds section 7AA to the <i>Town Planning and Development Act, 1928-1970</i> .
20	Traffic Act Amendment Act. Amends the <i>Traffic Act, 1919-1971</i> .
92	Traffic Act Amendment Act (No. 3). Amends section 32B of the <i>Traffic Act, 1919-1972</i> .
14	Transfer of Land Act Amendment Act. Amends the <i>Transfer of Land Act, 1893-1969</i> .
58	Transport Commission Act Amendment Act. Amends sections 47A and 47B of the <i>Transport Commission Act, 1966-1970</i> .
52	War Service Land Settlement Scheme Act Amendment Act. Amends section 6 of the <i>War Service Land Settlement Scheme Act, 1954-1962</i> .
1	Western Australian Marine Act Amendment Act. Amends sections 68 and 72 of the <i>Western Australian Marine Act, 1948-1970</i> .
54	Western Australian Products Symbol Act. Authorises the use of a symbol to distinguish and promote the sale of products made in Western Australia. Repeals the <i>Western Australia (Sales-Promotion Labels) Act, 1957</i> .
90	Western Australian Tertiary Education Commission Act Amendment Act. Amends subsection 1 of section 6 of the <i>Western Australian Tertiary Education Commission Act, 1970</i> .
26	West Kambalda Railway Act. Authorises the construction of a spur railway from the West Kalgoorlie-Lake Lefroy Railway to the Western Mining Corporation Limited mine site at West Kambalda.
29	Wood Distillation and Charcoal Iron and Steel Industry Act Amendment Act. Adds section 20A to the <i>Wood Distillation and Charcoal Iron and Steel Industry Act, 1943</i> .
71	Youth, Community Recreation and National Fitness Act. Establishes the Youth, Community Recreation and National Fitness Council of Western Australia. Promotes co-operation between and assists organisations concerned with youth service, community recreation and physical and cultural fitness. Repeals the <i>National Fitness Act, 1945-1959</i> and the <i>Youth Service Act, 1964</i> .
12	Zoological Gardens Act. Constitutes the Zoological Gardens Board to manage and control the Zoological and Acclimatisation Gardens at South Perth. Repeals the <i>Zoological Gardens Act, 1898-1955</i> .

GOVERNMENT ADMINISTRATION

The Public Service of Western Australia operates under the *Public Service Act, 1904-1973* and consists of a number of branches of the Service established as Departments in accordance with regulations made under the Act. The departments are Aboriginal Affairs Planning Authority, Agriculture, Audit, Chief Secretary's, Community Welfare, Crown Law, Development and Decentralisation, Education, Electoral, Environmental Protection, Fisheries and Fauna, Forests, Fuel and Power Commission, Labour, Lands and Surveys, Local Government, Medical and Health Services, Mental Health Services, Metropolitan Water Supply, Sewerage, and Drainage Board, Mines, Motor Vehicles, Police, Premier's, Public Health, Public Service Board, Public Works, State Government Insurance Office, State Housing Commission, State Taxation, Tourism, Town Planning, Treasury and the Workers' Compensation Board.

A number of other State Departments and Statutory Authorities, referred to as Instrumentalities, function under separate Acts although they very largely follow the conditions prescribed in the Public Service Act.

Establishment, abolition or re-organisation of departments are subject to the approval of the Governor.

A brief summary of the functions of each of the departments and principal State Instrumentalities established at 31 December 1971 was given in the 1972 issue of the Year Book.

HISTORY OF STATE GOVERNMENT DEPARTMENTS

A short but reasonably comprehensive history of State Government Departments was commenced in the 1971 issue of the Year Book. The following article, the fourth in the series, presents the historical development of the Premier's Department which had its

origins in a small personal secretariat established in the closing years of the last century. Departments dealt with in previous articles were the Public Works Department, the Education Department and the Police Department.

PREMIER'S DEPARTMENT

Western Australia was granted responsible self-government in 1890. Provision was made in the new Constitution, proclaimed in October of that year, for the establishment of a Parliament of two Houses—the Legislative Council and Legislative Assembly to take the place of the old partly elected and partly nominated Legislative Council. The Governor, whilst continuing to preside over the Executive Council, was superseded as the Chief Executive Officer in the Colony by a Premier and Cabinet responsible to Parliament.

Following the Parliamentary elections in December 1890, the Honourable John Forrest was commissioned by the Governor to form the first Ministry under responsible self-government in Western Australia. Forrest (subsequently Sir John Forrest and later Lord Forrest) held his position as the first Premier of Western Australia until 1901.

In February 1891, Frederic D. North, a clerk in the Crown Lands Office was appointed by the Premier to be his Secretary and Clerk to the Executive Council. For both appointments Cabinet and Executive Council approval was necessary. Secretary North may be considered the originator of the Premier's Department because it was his submission to Sir John that initiated the creation of the Department in May 1898. Although gazetted as a sub-department of the Treasury, the Department was established as a small personal secretariat to the Premier and consisted of North as Under Secretary, a shorthand clerk, a records clerk and a messenger. With the exception of the Under Secretary, the staff had been transferred from the Treasury and the Department of the Colonial Secretary.

The newly created Department was located in the Government Buildings on the corner of Barrack Street and St George's Terrace, Perth. This site, known also as the Treasury Buildings (and today called the Central Government Buildings) was to be the location of the Department and the Executive Council for more than sixty years.

The establishment of the Department did not meet with approval from all sections of the Western Australian community. Although the Department's first vote of funds of £745 for the financial year 1898-99 was passed without attracting adverse comment in Parliament, the following year the Department and its vote of £880 became the centre of a Parliamentary debate. In the discussion on the Annual Estimates for the financial year 1899-1900 Opposition Members of Parliament were particularly searching in the questions they put to Sir John Forrest demanding reasons for the creation of the Department. It was argued that because the position of Premier⁽¹⁾ was not mentioned in the Constitution, there was no authority to establish a Premier's Department. Fears were also expressed that the office staff would not be discreet when dealing with confidential matters. In allaying these doubts, Premier Forrest explained that the formation of the Department had become necessary in order to deal with interviews and process the volume of correspondence that required his attention. In particular Sir John stated that 'The interviewing was a troublesome business, and it was necessary to have an officer as Under Secretary who had some tact and address to deal with persons who came to see the Premier, for it was impossible for him or for any other Premier to see everyone.'⁽²⁾ The Premier also made it clear that he had attempted to get by with clerical assistance from the Treasury but this arrangement had become unsatisfactory because the officers had their own Treasury duties to attend to.

In the period between responsible government and Federation, State affairs requiring the attention of the Premier and his Ministers, had grown immensely. The gold discoveries and the associated influx of people into the State, the Government's capital works projects which required to be serviced by overseas loans, and the legislative programme were matters requiring constant attention. Additionally, Premier Forrest participated in the Federation Conventions arranged by the Australian Colonies. As an example of the

⁽¹⁾ The title of 'Premier' is a courtesy title bestowed by Parliament and not by the Constitution.

⁽²⁾ Western Australia Parliamentary Debates, Third Parliament, Fourth Session, vol. 15 (New Series) 1899, p. 2205.

demands made upon his time, in 1897, the year before the creation of the Premier's Department, Sir John took part in a general election, two Federal Conventions—one in Adelaide and one in Sydney—and represented Western Australia at the Diamond Jubilee celebrations of Queen Victoria in London. With his time at such a premium, the formation of the Premier's Department became an administrative necessity. Notwithstanding the arguments put forward by the opposing members, the Premier's Department vote of £880 was passed after much debate.

Sir John retired from office in February 1901 to enter Federal politics. In the immediate years following his retirement, from 1901 to 1906, the Western Australian Government was held by seven Ministries with six different Premiers. These changes were also reflected in the Premier's Department.

In July 1901, the Department ceased to be a sub-department of the Treasury and changed its location to the Attorney General's Department. This move was necessary because the Premier, who was also the Attorney General, had not included the Treasury in his portfolio.

In August 1901, the issue of the Premier's Department was again raised in the State Parliament. At question time in the Legislative Assembly, the Premier, Mr George Leake, was asked if it was his intention to abolish the Department. Without committing himself on the subject, the Premier replied that if it was possible to abolish the Department, then this course of action would be followed. The uncertainty surrounding the future of the Department was finally resolved in July 1902 when the Premier's and the Colonial Secretary's Departments were amalgamated. This move was the result of an official report concerning the Premier's Department made by Under Secretary North to the Premier in May 1902. In his submission, North proposed that the administration of the Executive Council and the Premier's and the Colonial Secretary's Departments should be amalgamated into one unit. He claimed that the population of the State did not warrant separate organisations and with proper administration the work could be performed by one Department. Following the amalgamation, the Colonial Secretary's Department absorbed the Premier's office staff and F. D. North was appointed Under Secretary, Colonial Secretary's Department.

The provision, however, of clerical and secretarial assistance to the Premier was still necessary, and the new system which required the Premier to obtain this aid from the office of the Colonial Secretary did not appear to be a satisfactory arrangement.

To remedy this situation, in August 1903 A. C. Kessell was appointed to the position of Secretary to the Premier; the former title of 'Premier's Department' was not revived, the title 'Premier's Office' being used instead. Between 1903 and 1906 the Office was located in the Departments administered in the portfolio of the Premier of the day. First, there was a move to the Department of the Colonial Treasurer and Minister for Education, followed by a transfer to the Department of the Colonial Treasurer and Minister for Justice. In 1907, the importance and autonomy of the Premier's Office, as a separate entity and not attached to any Department, were recognised. As a consequence, in the Appropriations for that year the Premier's Office was again granted its own allocation of funds.

In November 1901, the first of the Premiers' Conferences was convened in Melbourne. The Western Australian Premier was unable to attend this inaugural Conference, which took the form of a meeting between the State Premiers and the Prime Minister to discuss Federal legislation and issues that had arisen between the States and the Federal Government following the formation of the Commonwealth. The initiative in calling the conference remained with the States until 1919, when the accumulation of power by the Commonwealth throughout the First World War and the post-war problems made it necessary for the Federal Government to assume the leadership, a situation which has continued to the present day. It is customary for the Permanent Head of the Premier's Department to attend the conferences in the capacity of advisor to the Premier.

Early in 1914, A. C. Kessell left the Premier's Office to take up the post of Official Secretary at the Western Australian Agent General's Office in London. The Agency was

established in 1892 and given formal recognition by Act of the Colonial Parliament in 1895. The functions of the Agency included promoting emigration to Western Australia, developing markets for the Colony's products in the United Kingdom, supervising the purchase of stores and machinery for Government Departments, and assisting in floating loans and obtaining funds in the United Kingdom for the Colonial Government. Although the administration of the London Agency had been the responsibility of the Treasury Department, in 1917 control of the Agency was transferred to the Premier's Office.

Approval to fill the vacancy caused by Kessell's departure was given in July 1914, when the State Cabinet confirmed the appointment of L. E. Shapcott as Secretary to the Premier.

The entry of Australia into the First World War placed a burden on all Departments of the State Public Service. Although only possessing a small staff the Premier's Office successfully handled the increased volume of, and in many cases unfamiliar, work that was thrust upon it. Functioning as a channel of communication between the Commonwealth and State Governments, many vital wartime issues, such as coal and shipping shortages, passed through the Premier's Office.

By 1917, enemy submarine activity had increased to such an extent that it was taking up to six months for the Western Australian Agent General to receive replies to his letters sent to Perth. To overcome this problem greater use was made of the cable service to transmit coded messages between Perth and London.

In August 1919, State Cabinet gave approval for the title of 'Secretary to the Premier' to be reclassified as 'Secretary, Premier's Department' and for L. E. Shapcott to be appointed to the position of Permanent Head of the Department. By the end of 1919, the Votes and Departments administered in the Premier's Department comprised the London Agency, Government Motor Car Service, Public Service Commissioner, Railway Advisory Board, Government Printer, Government Lithographer, Services to Members of Parliament and Royal and other Commissions of Enquiry. In 1920, the State Gardens Board was established and L. E. Shapcott was appointed as Chairman of the Board, a position he retained until 1942. The development of many parks and recreation areas, including John Forrest National Park, Yanchep and the Zoological Gardens was undertaken by the Board in the depression years and served as a medium for unemployment relief. The Gardens Board's activities were partly financed from the McNess Fund—a fund established in the early 1930s by C. (later Sir Charles) McNess and administered by L. E. Shapcott as the Fund's Trustee. The Board also received a Government grant and other revenue included such unlikely sources as the proceeds from old time dances held in Government House Ballroom. The Gardens Board subsequently became the National Parks Board of Western Australia in 1956.

In mid-1923 Secretary Shapcott was appointed as Clerk of the Executive Council. Before his appointment the position had been held by several occupants. In the years between 1902 and 1906, officers from the Colonial Secretary's Department had undertaken the duties associated with the position. In August 1906, Bernard Parker, a solicitor who had previously been employed by the Crown Law Department, was appointed as Clerk of the Executive Council. In July 1923 Parker resigned from this post to become Clerk of the Legislative Council.

At the 1936 reclassification of the State Public Service, the position of Secretary, Premier's Department, was changed to Under Secretary, Premier's Department.

With the declaration of war in September 1939, the Premier's Department once again constituted the liaison between the State Government and local service commanders and between the Commonwealth and State Departments. Under various National Security Act Regulations the Premier was vested with wide powers. For example, he was empowered to 'make such provision as he deemed necessary to protect the persons and property of the civil population in the State or any part thereof in case of emergency'. Orders were made covering diversified matters including blackouts, hotel hours, consumption and destruction of intoxicating liquor, restriction of race meetings, control of building materials and an increase in the State basic wage.

Following the retirement of L. E. Shapcott, in August 1941, H. T. Stitfold, who had served in the Department since 1916, was appointed Secretary, Premier's Office. The change of title from Department to Office occurred in August 1941 when the Public Service Commissioner reclassified the Department as a sub-department of the State Treasury.

The spread of hostilities to South-East Asia in December 1941 brought changes to the Premier's Office. Early in the New Year the Premier's Office moved from its location in the Treasury Building to an apartment on the third floor of Lawson Flats, a residential building situated on the corner of the Esplanade and Sherwood Court, Perth. This shift in location was the result of decentralisation measures to minimise the effect of possible air attack on Government offices. Fortunately, no attacks took place and towards the end of the war the Office returned to its former location.

Also in 1942, H. T. Stitfold was seconded to the Commonwealth Government for the duration of the war as Deputy Director General of Manpower Priorities. The position of Secretary, Premier's Office, was occupied in an acting capacity by the Assistant Secretary, R. H. Doig, from 1942 until his permanent appointment in 1945.

In December 1945, H. T. Stitfold was appointed Under Secretary, Chief Secretary's and Public Health Departments and Comptroller General of Prisons. The vacant position of Secretary, Premier's Office was filled by R. H. Doig, who also became Clerk of the Executive Council. In January 1948, the title of Permanent Head was changed from 'Secretary, Premier's Office' to 'Under Secretary, Premier's Department' and the Department ceased to be a sub-department of the Treasury. In 1959, in addition to his departmental duties, Under Secretary Doig was appointed Chairman of the Western Australian Tourist Development Authority. In 1965 following his appointment as Commissioner of the State Public Service, R. H. Doig was succeeded by W. S. Lonnie, the Director of the Civil Defence and Emergency Service of Western Australia, as Under Secretary, Premier's Department and Clerk of the Executive Council.

Since its establishment in 1898 to provide secretarial and administrative assistance to the Premier, Executive Council and State Cabinet, the Department's functions have expanded. Today it provides necessary liaison between the Government and the Governor, the Legislature and the Judiciary—the separation of whose functions is fundamental to the operation of the Westminster system of Government on which the Australian State and Commonwealth systems of Government are modelled. In providing these services the Department becomes involved in activities which touch on many matters of public interest in Western Australia.

The Department provides essential service in the administration of the Governor's Establishment and the processing of recommendations for the award of Royal Honours. However, the bulk of the Department's work is with the administration of the machinery of Executive Government. The Department is responsible for Cabinet arrangements including the preparation of the agenda and the recording and promulgation of Cabinet decisions. It arranges the swearing-in of Governments, appointments and resignations of Ministers and the allocation of departments and statutory authorities to Ministerial portfolios. The Permanent Head of the Department is also the Clerk of the Executive Council.

An historic event occurred in March 1954, when Her Majesty, Queen Elizabeth II, whilst visiting Western Australia, presided over a meeting of the Executive Council, the only occasion upon which a reigning Monarch has done so in this State.

The Department is responsible for the Administration of Royal and other Commissions of Inquiry and for appointment of Justices of the Peace.

It functions, too, as a channel of communication between Western Australian Government Ministers and their counterparts in other States and the Australian Government. Matters relating to consular representations in Western Australia by overseas countries are also administered in the Department.

The planning of State ceremonies, receptions, and the drafting of itineraries for visiting Royalty, Heads of State and distinguished visitors is undertaken by the Reception Branch of the Department. The administration of the Government Garage and the provision of motor transport for Government Ministers and distinguished visitors is also the responsibility of the Department.

In addition to the London Agency, the Department also administers the Tokyo Agency. Established in 1968, the role of the Tokyo Agency is to provide an information service and promote Western Australian trade with Japan and South-East Asia.

The direction and control of the State Civil Defence and Emergency Service organisation is also the Department's responsibility. In the years following the 1939-45 War and the consequent disbandment of the Air Raid Precaution organisation there was little activity in civil defence matters. It was not until 1956 that the State Civil Defence organisation was formed. In 1959 the State Emergency Service was also established, the function of this Service being 'to cope with civil disasters, including fires, floods, cyclones, railway accidents, crashed aircraft, explosions and search for lost persons'. In 1961 the two organisations were combined to form the Civil Defence and Emergency Service of Western Australia. One of the major functions undertaken by this organisation is the preparation of plans, in co-operation with Government Departments, local authorities and private organisations, for the reduction and alleviation of the effect of enemy attack or natural disaster on the civil population and property in Western Australia.

To ensure that the public is fully informed of the activities of the Government, a Public Relations section has been attached to the Premier's Department. The maintenance of adequate and satisfactory publicity becomes necessary as the complexity of Government activity increases. The Public Relations section is also responsible for the preparation of publicity material for distribution in the United Kingdom and Europe by the Western Australian Agent General.

In July 1967, after having been located in the Treasury Building for more than sixty-five years, the Premier's Department and the seat of Government—the Executive Council—moved to their present location in the Superannuation Building, 32 St George's Terrace, Perth.

THE JUDICATURE

The two major factors in the development of the Australian legal system have been its British origin and the Commonwealth Constitution of 1900. This statute, an Act of the Imperial Parliament in London, limited the legislative power of State Parliaments in some respects and created a federal legislature. Since 1942, however, the Imperial Parliament can legislate for Australia only at Australia's request. The sources of Australian law of today are, therefore, found in Commonwealth and State legislation, in some Imperial legislation, and in the common law. Independence of the judiciary is an essential part of the Australian legal system.

The following list shows members of the Western Australian judiciary at 31 December 1973.

Supreme Court of Western Australia

Chief Justice	....	....	The Honourable Sir Lawrence Jackson, K.C.M.G.
Senior Puisne Judge	....	....	The Honourable J. E. Virtue
Puisne Judges	....	....	The Honourable F. T. P. Burt
			The Honourable J. M. Lavan
			The Honourable J. L. C. Wickham
			The Honourable A. R. A. Wallace
			The Honourable R. E. Jones

The District Court of Western Australia

Chairman of Judges	....	....	His Honour Judge S. H. Good
Judges	....	....	His Honour Judge D. C. Heenan
			His Honour Judge W. P. Pidgeon
			His Honour Judge A. E. Kay
			His Honour Judge F. Ackland

Particulars of these and other Western Australian courts, and Commonwealth courts appear in Chapter V, Part 6 and Chapter X, Part 1.

OVERSEAS REPRESENTATION IN WESTERN AUSTRALIA

At 31 December 1973 there were twenty countries represented in Western Australia by a consular agent, vice-consul, consul, or consul-general, as follows.

Austria—R. Holmes, Honorary Consul, 21 Howard Street, Perth 6000.

Belgium—Honorary Consul (vacant), T. and G. Building, 37-9 St George's Terrace, Perth 6000.

Britain—C. E. Dymond, C.B.E., Consul-General, A.N.Z. House, 84 St George's Terrace, Perth 6000.

Denmark—J. C. Garnsworthy, Honorary Consul, 25 Henry Street, Fremantle 6160.

Finland—R. C. Mattiske, Honorary Consul, 237 Murray Street, Perth 6000.

France—J.-L. Montegut, Honorary Consular Agent, 180 St George's Terrace, Perth 6000.

Germany, Federal Republic of—P. R. Adams, Honorary Consul, 524 Hay Street, Perth 6000.

Greece—E. P. Doukas, Consul, 132 Mounts Bay Road, Perth 6000.

Guatemala—P. Smetana, Honorary Consul, 28 Warralong Crescent, Mount Lawley 6050.

Italy—Consul (vacant), 18 Walker Avenue, West Perth 6005.

Japan—S. Kushida, Consul-General, 36 King's Park Road, West Perth 6005.

Netherlands—Consul (vacant), Council House, 27-9 St George's Terrace, Perth 6000.

New Zealand—A. F. Jacobsen, A.F.C., Consul, St George's Court, 16 St George's Terrace, Perth 6000.

Norway—E. A. M. Wright, Honorary Consul, Lombard House, 251 Adelaide Terrace, Perth 6000.

Philippines—G. V. Mummery, Honorary Consul, 1095 Hay Street, Perth 6000.

Portugal—C. G. Dudley, Honorary Vice-Consul, Mt Newman House, 200 St George's Terrace, Perth 6000.

Sweden—H. Morgan, Honorary Consul, Market House, 849-51 Wellington Street, Perth 6000.

Switzerland—R. H. Abplanalp, Honorary Vice-Consul, 6 London Street, Mount Hawthorn 6016.

United States of America—W. H. Bruns, Consul, M.L.C. Building, 171 St George's Terrace, Perth 6000.

Yugoslavia—P. Mihailovski, Consul, 24 Colin Street, West Perth 6005.

In addition, the Grand Duchy of Luxembourg is represented in Western Australia by the Consul for Belgium, and Liechtenstein by the Vice-Consul for Switzerland.

STATE REPRESENTATION OVERSEAS AND IN OTHER STATES

Western Australia has been represented in the United Kingdom by an Agent General since 1892, the first appointment to the post being that of Sir Malcolm Fraser. An Office is maintained at Western Australia House, 115 Strand, London, W.C.2. Its functions include the representation of all government departments which have business in Britain and Europe, the purchase of government stores and equipment, the attraction of migrants, the encouragement of overseas private investment in Western Australia, and the provision of various types of assistance to visitors from Western Australia. In addition, the Office acts as agent for the State Treasury and as a receiving agency for The Rural and Industries Bank of Western Australia. Western Australia's European Public Relations Office also operates from Western Australia House. The Agent General for Western Australia, the Honourable W. S. Bovell, is the personal representative in Britain of the State Premier.

Branches of the Western Australian Department of Tourism have been established in New South Wales at 92 Pitt Street, Sydney, in Victoria at 2 Royal Arcade, Melbourne, and in South Australia at 34 King William Street, Adelaide. In the Northern Territory, the agent for the Department is located at Western Australia House, Cavenagh Street, Darwin.

THE LOCAL GOVERNMENT SYSTEM

The function of local government in Western Australia is performed by a number of Councils (or, in special circumstances, by Commissioners appointed by the Governor) exercising powers conferred by the Parliament of the State. Each of the Councils consists of members elected by a local community and is responsible for the provision of many of the services necessary for the organisation and welfare of the community which it represents.

As early as 1838 an Act providing a measure of local government was passed and under its provisions the management and control of the town of Perth was vested in a body of trustees. The first elected Town Trust was constituted at Perth in 1842 under an Act of 1841 for the 'Improvement of Towns in Western Australia'. The Trust was dissolved in 1858 and replaced by a City Council, the town of Perth having been constituted a city when it became the seat of a Bishop in 1856.

Legislation was enacted in 1871 establishing Municipalities and Road Boards throughout the Colony. The existing Statute regulating the operations of the local authorities is the *Local Government Act, 1960-1973*, which is administered through a Department of Local Government by the Minister for Local Government. This Act consolidates the law relating to local government in Western Australia, and by its provisions the Municipal Corporations Act, the Road Districts Act and a number of other, less important, Acts were repealed. The legislation came into operation on 1 July 1961 and from that date new designations were applied to many local government districts, bodies and offices. Former Municipalities, other than cities, became known as 'Towns' and Road Districts were renamed 'Shires'. Municipalities which already had city status remained 'Cities'. The executive body in each local government district became a 'Council', City Councils and Town Councils being presided over by a Mayor, and Shire Councils by a President. The chief non-elective executive office of a City or a Town is that of 'Town Clerk' and of a Shire, that of 'Shire Clerk'.

At 31 December 1973 there were 7 Cities, 13 Towns and 118 Shires in Western Australia.

Local Government Districts

The only unincorporated area in mainland Western Australia is King's Park, a public reserve of almost one thousand acres in Perth, all other land being incorporated within the district of a City, Town or Shire.

On presentation of a petition signed by a prescribed minimum number of ratepayers, the number varying with the subject matter, the Governor may by Order constitute any part of the State as a Town; constitute any unincorporated area as a Shire; constitute as a new Shire any part of an existing Shire; divide a Shire into two or more Shires; sever portion of a district and annex the portion to an adjoining district, or constitute the portion as a new Town or Shire; annex to a district any adjacent unincorporated areas; divide a district into wards; or abolish a district and dissolve the local governing authority.

The Act establishes a Local Government Boundaries Commission of three members, one being an officer of the Department of Local Government, who is Chairman of the Commission. The other members must be persons having experience in local government and nominated by associations of local government authorities. The Minister may refer to the Commission any question concerning the constitution or alteration of the constitution of local government districts. Every case where authorities are unable to agree on a matter of amalgamation or severance of territory must be referred to the Commission.

On the petition of the local authority concerned, the Governor may by Order declare to be a City any district which satisfies certain specified requirements. These requirements are that, during the three years immediately preceding the declaration, it shall have maintained a population of not less than 30,000 persons if situated in the metropolitan area as declared for the purposes of the Act, or not less than 20,000 persons if situated outside that area; and have maintained a gross revenue of \$200,000 for each of the three years. In addition the district must be clearly distinguishable as a centre of population having a distinct civic centre with adequate halls and cultural facilities, and must have sufficient residential, commercial and industrial centres to justify its declaration as a separate city. The seven Cities in Western Australia are all situated in the Perth Statistical Division and five of them had been granted city status before the requirements imposed by the present legislation became operative. These five Cities are Perth (proclaimed in 1856), Fremantle (1929), Subiaco (1952), Nedlands (1959), and South Perth (1959). The Town of Melville was declared a city on 3 May 1968 and the Shire of Perth was redesignated the City of Stirling with effect from 24 January 1971, having satisfied the requirements for city status provided by the Local Government Act.

The boundaries of local government districts as they existed at 31 December 1973 are delineated on the maps of the State immediately preceding the Index and the names and designations as at that date are given in accompanying lists.

Constitution and Electoral Provisions

The provisions of the Local Government Act relating to the composition of a City Council or a Town Council require that, in addition to the Mayor, there shall be, where the population is less than 1,000, six councillors; where the population is between 1,000 and 5,000, nine councillors; and if the population exceeds 5,000, twelve councillors if the district is not divided into wards but, where the district is divided into wards, three councillors for each ward. It is provided that a Shire Council shall consist of not less than five nor more than thirteen members, including the President.

Two methods of election to the office of Mayor or of President are prescribed. In the case of a City or Town, election is usually by a poll of the electors enrolled for the district. The President of a Shire is usually elected by the councillors from among their own number. It is provided, however, that a City or Town may adopt the system of election of the Mayor by the councillors, and that a Shire may conduct a poll of its electors for election to the office of President. The question of the adoption of the alternative system must, in all cases, be determined by submission to a poll of the electors, after delivery to the Mayor or the President of a resolution of a majority of the councillors or a petition signed by one-tenth of the electors, or by fifty electors, whichever is the greater. If not less than 15 per cent of eligible electors vote at the poll and a majority of the valid votes cast are in favour of the proposed alteration, the Governor may order its adoption.

The Act constitutes the office of Deputy Mayor, in the case of a City or a Town, and of Deputy President in the case of a Shire, and requires that the Council shall elect one of the councillors to the office.

Provision is made for local government elections to be held on the fourth Saturday in May of each year but in specified circumstances the Governor may, by proclamation, appoint a Saturday in May, earlier than the fourth Saturday, to be the election date. Membership of a Council is elective in all cases, the qualified electors being adult natural-born or naturalised British subjects who own or occupy rateable land in the district. The preferential system of voting is used and representation is generally on the basis of wards into which the district may be divided. Plural voting applies, an elector being entitled, in accordance with the rateable value of the property owned or occupied by him, to a number of votes which may not, however, exceed four in elections for Mayor or President, or two in elections for councillor. Voting is not compulsory. The Act contains provisions enabling nominees of corporations owning land in a district to vote at local government elections and to be elected to membership of the Council. Subject to disqualification on certain specified grounds, all adult persons who are natural-born or naturalised British

subjects owning or occupying rateable land within the district are eligible for election to the Council of the district whether as Mayor, President or councillor, provided that their names appear on the Council's electoral roll.

The term of office of a Mayor or a President is two years if elected by the electors of the district, or one year if elected by the Council. Councillors are elected for a term of three years, as near as practicable to one-third of their number retiring each year. On the expiration of their term of office, all members, including the Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

It is provided that, if in a particular district there should at any time be no Council or insufficient councillors to form a quorum, a Commissioner may be appointed to exercise all the powers of the local authority.

Functions of Local Authorities

The functions and powers of local authorities are extremely diverse in character. They are prescribed in detail in the Local Government Act and some of the more important of them are referred to in later Chapters of the Year Book. For example, reference to local government activity in the fields of road construction and maintenance will be found in Chapter VI, Part 1 and Chapter IX, Part 3; the provision of parks, gardens and recreation grounds in Chapter V, Part 2; libraries in Chapter V, Part 2; public transport facilities in Chapter IX, Part 3; water supplies in Chapter VII, Part 2; town planning and building control in Chapter V, Part 4; and the licensing of vehicles and road traffic control in Chapter IX, Part 3. Among the many other powers of local authorities are those relating to hospitals and nursing services, kindergartens, hostels for school children, community centres, dental clinics, infant and maternal health centres, day nurseries, jetties, swimming baths, swimming pools, sanitation and disposal of refuse, fire prevention, eradication of noxious weeds and vermin, electricity generation, aerodromes, abattoirs, quarries, pounds and cemeteries. Under the provisions of the Health Act local authorities are responsible for certain aspects of health administration.

The operations of any local government authority may be subject to investigation by a person appointed by the Governor or the Minister and having, for the purposes of the inquiry, the powers of a Royal Commission.

Financial Provisions

Financial powers of local authorities, although derived mainly from the Local Government Act, are also provided by other statutes, including the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act, the Fire Brigades Act, the Cemeteries Act, the Library Board of Western Australia Act, the Argentine Ant Act and the Noxious Weeds Act. Government grants, particularly for road works, are another important item in local government finance.

Before the commencement of the Local Government Act on 1 July 1961, a number of rates, in addition to those authorised by local government legislation, were imposed as separate levies. These included health, sanitary and sewerage rates, water rates and vermin rates, as well as rates relating to fire brigades, cemeteries, libraries and the control of Argentine ants and noxious weeds. Under the provisions of the Local Government Act, the local authorities may include these separate levies in the general rate provided for in the Act.

The general rate for any year is determined, subject to certain statutory limits, by dividing the sum required to make up the difference between anticipated expenditure and estimated revenue from sources other than rates for that year by the total value of rateable property in the district. In assessing this value, every local authority must adopt valuations made by the State Taxation Department, by the water supply authority for the district, or by a qualified valuer (or valuers) appointed by the Council. The Act provides for the constitution of Valuation Appeal Courts, to which appeals may be made on matters concerning valuations of property and liability for rates as assessed by the Council.

Valuations may be on the basis of either 'unimproved value' or 'annual value'. The unimproved value generally represents the price which the rated land might be expected to realise if sold on the open market and, as the term implies, excludes any improvements. The annual value is an estimate of the annual rental value of the property including improvements, but with a prescribed deduction to cover rates, repairs, insurance and other related expenditure. Generally, City Councils and Town Councils are required to assess the general rate on the basis of annual value, and Shire Councils on unimproved value. It is provided, however, that any Council may, under certain specified conditions, adopt the alternative basis. Although in general a Council is required to levy a rate which is uniform throughout its district, it may differentiate in rating by charging a higher rate in a specified area where expenditure, including loan interest and repayments, is incurred in providing special services for the benefit of that area.

Local authorities are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. Borrowing by means of a special bank overdraft is permissible, with the consent of the Minister, for the installation of sewerage connections or septic tanks and, with the approval of the Governor, for other works or undertakings. Money may also be borrowed by the sale of debentures, repayment being either by the system of reducible principal or by means of a sinking fund. Payments to debenture holders are made at prescribed intervals. Under the system of reducible principal, the local authority undertakes to pay both principal and interest by fixed instalments. Where redemption is by means of a sinking fund, the local authority is required to establish and maintain the necessary fund at the State Treasury. Interest on the loan is normally paid half-yearly and the full amount of the loan is repaid at maturity.

The extent of loan raisings for works and undertakings is controlled by a provision which, except with the specific approval of the Governor, imposes a limit on the borrowings of an authority. The total amount of loans for which a Council may be indebted at any one time is a sum equal to ten times the amount obtained by subtracting from the average of the ordinary revenue of the authority during the preceding two years the average, for the same period, of its annual expenditure on the servicing of loans. The legislation allows that balances standing to the credit of sinking funds for loan repayment, as well as amounts actually repaid, may be deemed to be repayments for the purposes of calculating net total debt. In the case of borrowings to liquidate existing loans, it is provided that the money raised shall not exceed the outstanding balance of the loan.

Before a loan may be raised by the issue of debentures, approval of the borrowing must be obtained from the State Treasury and the local authority must then publish in a newspaper and in the *Government Gazette of Western Australia* a notification of its intention to borrow money, including a statement of the amount of the proposed loan, its purpose and other relevant matters. Except in the case of a loan to liquidate an existing loan debt, the ratepayers of the district may demand that the proposition be submitted to a poll. If less than 15 per cent of the ratepayers vote at the poll, the raising of the loan is approved. Where not less than 15 per cent of ratepayers vote and the majority are against the loan, or the number of votes against the loan is equal to the number of those in favour, the raising of the loan is forbidden.

Certain of the works and undertakings for which loan moneys may be used are specified in the Local Government Act. They include the construction of streets, roads and bridges, sewers, drains and water works; the erection or purchase of electric lighting plant, gas works and stone quarries; the provision of hostels for school children, libraries and other recreational facilities; the construction of civic and other buildings; and the purchase of land, materials and equipment. Where a particular work or undertaking is not specified in the Act the Governor may approve of it as a project for which money may be borrowed.

The financial transactions of local government authorities are subject to annual audit either by an auditor (or auditors) appointed by the Council or by a government inspector appointed by the Minister. To qualify for the office of auditor, a person must be a member of a specified institute or society of accountants and be registered as an auditor under the Companies Act. Appointment is for a term not exceeding two years, at the end of which time the holder of the office is eligible for reappointment.

The financial year for all Councils ends on 30 June.

Details of the revenue and expenditure of local authorities during the five-year period ending with the financial year 1971-72 are given in the section *Local Government Finance* in Chapter VI, Part 1.

Information in greater detail and particulars relating to the financial operations of individual local authorities are given in the annual publication *Statistics of Western Australia—Local Government* issued by the Western Australian Office of the Bureau.

General information regarding each City, Town or Shire appears in the same publication and, in particular, in the annual *Abstract of Statistics of Local Government Areas* which provides a wide selection of demographic and economic statistics for individual local authorities.

CHAPTER IV—POPULATION AND VITAL STATISTICS

Part 1—Population

NOTE. Population censuses prior to the Commonwealth Census of 1911 were undertaken by the Governments of the several Australian Colonies. In the Western Australian census it was the practice to exclude full-blood Aborigines from the tabulations. Aborigines have been enumerated as completely as possible at all censuses since the establishment of the Commonwealth, but those having more than one-half Aboriginal blood (see reference 'Aborigines' on page 121) were excluded from published census results in accordance with the requirements of section 127 of the Australian Constitution. This section was repealed with effect from 10 August 1967, and official population statistics for dates and periods subsequent to the 1966 Census include Aborigines. It has been possible to compile some data from the 1966 Census on the basis of total population (i.e. including Aborigines), and particulars have been incorporated, as appropriate, in the tables on the following pages.

Figures relating to the 1971 Census are final. Population estimates for dates and periods up to 30 June 1971 are final; later estimates are subject to revision in accordance with the results of the next census.

The State of Western Australia, although comprising almost one-third of the total area of Australia, contains little more than 8 per cent of the population.

At the end of 1829, the year of establishment of the Colony, there were 1,000 persons in Western Australia. Progress in the early years was slow, and in 1849 the population was still less than 5,000. Transportation of convicts, begun in the following year, resulted in some acceleration, but it was not until the discovery of gold in the Kimberley in 1885 and the rich finds at Coolgardie in 1892 and at Kalgoorlie in 1893 that any marked increase took place. This development was so rapid that, in the last decade of the century, the population was almost quadrupled, from 48,500 at the end of 1890 to 180,000 in 1900, representing an average annual rate of increase of 14·01 per cent. The rate of growth in those years has never been approached in the present century, as will be seen from the table on page 139, but the average annual rate of increase of Western Australia's population from the beginning of the century to the end of 1972, 2·52 per cent, has been higher than that of any other State and of Australia as a whole (1·75 per cent).

THE CENSUS

The first systematic census of the Colony of Western Australia was taken in 1848, since when there have been fourteen enumerations, at the dates shown in the table on page 121. The Census of 1881 was the first taken simultaneously in all the Australian Colonies and formed part of the first simultaneous census of the British Empire.

The first census of the Commonwealth of Australia conducted under the authority of the *Census and Statistics Act* 1905 was taken in 1911. The Act provided that a census should be taken in that year 'and in every tenth year thereafter'. In 1930 this provision was amended by the addition of the words 'or at such other time as is prescribed'. The depressed economic conditions of 1931 caused the postponement of the third Australian census to 1933, and because of war conditions the fourth Australian census was not taken until 1947. Consideration was then given to holding future censuses in the series of years originally provided for by the Act. However, it was thought that the interval from 1947 to 1951 was too short, and it was therefore decided to take the fifth census in 1954, at the mid-point of the period from 1947 to 1961. The sixth census was held in 1961. Owing to the administrative demand for more frequent counts of the population, censuses were taken in 1966 and 1971.

Scope of the Census

The Australian census is conducted on a *de facto* basis, i.e. it records the population actually in Australia, persons being enumerated at the place where they spent the night of the census, and the population so recorded being credited to that place whether or not it is the usual place of residence.

The census covers the population of Australia and the dwellings in which it lives. The only persons excluded from the census tabulations are diplomatic representatives of overseas countries and their families and staffs having diplomatic immunity in accordance with international practice. Prior to the Census of 30 June 1971 full-blood Australian Aborigines were also excluded (see the following section *Aborigines*).

The term 'dwelling', as defined in the Census and Statistics Act, means 'a building, erection, or tenement, whether permanent or temporary, which is wholly or partly used for the purpose of human habitation and includes any ship or other vessel in any port of the Commonwealth or in any inland waters thereof, or any ship or vessel on a passage between any two Commonwealth ports'.

Tables dealing with dwellings recorded at the census will be found in Chapter V, Part 4.

Aborigines. Before an amendment to the Australian Constitution in 1967, it was provided by section 127 that 'in reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted'. This provision was deleted following a referendum held on 27 May 1967 which resulted in a large majority of votes in favour of its repeal. The enabling Act, the *Constitution Alteration (Aboriginals) 1967*, came into operation on 10 August 1967.

With regard to the original provision, Commonwealth legal authorities were of the opinion that persons of the half-blood were not 'aboriginal natives' within the meaning of the Constitution, and *a fortiori* that persons of less than half Aboriginal blood were not Aboriginal natives. Accordingly, only persons having Aboriginal blood to a degree greater than one-half were excluded from the census tabulations. Dwellings occupied solely by full-blood Aborigines so defined were similarly excluded.

Tables relating to the Aboriginal population appear on pages 136-7.

Recorded Population

The population recorded in Western Australia at each census from 1848, its relation to the Australian population, and the masculinity are shown in the following table.

POPULATION AT EACH CENSUS DATE—1848-1971 (a)
WESTERN AUSTRALIA AND AUSTRALIA

Date of Census	Western Australia			Australia	Western Australia	
	Males	Females	Persons	Persons (b)	Proportion of Australia (per cent)	Masculinity (c)
1848—10 October	2,818	1,804	4,622	326,445	1.42	156.21
1854—30 September	7,779	3,964	11,743	671,436	1.75	196.24
1859—31 December	9,522	5,315	14,837	1,097,305	1.35	179.15
1870—31 March	15,375	9,410	24,785	1,606,057	1.54	163.39
1881—3 April	17,062	12,646	29,708	2,250,194	1.32	134.92
1891—5 April	29,807	19,975	49,782	3,177,823	1.57	149.22
1901—31 March	112,875	71,249	184,124	3,773,801	4.88	158.42
1911—3 April	161,565	120,549	282,114	4,455,005	6.33	134.02
1921—4 April	177,278	155,454	332,732	5,435,734	6.12	114.04
1933—30 June	233,937	204,915	438,852	6,629,839	6.62	114.16
1947—30 June	258,076	244,404	502,480	7,579,358	6.63	105.59
1954—30 June	330,358	309,413	639,771	8,986,530	7.12	106.77
1961—30 June	375,452	361,177	736,629	10,508,186	7.01	103.95
1966—30 June (a)	432,569	415,531	848,100	11,599,498	7.31	104.10
1971—30 June (a)	529,066	501,403	1,030,469	12,755,638	8.08	105.52

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 120); those for 1966 and 1971 refer to total population (i.e. including Aborigines).
(b) Figures for dates prior to 3 April 1881 are estimates. (c) Number of males to each 100 females.

Characteristics of the Population

Masculinity. The sharp rise in masculinity between the Census of 1848 and the three succeeding enumerations, as shown in the preceding table, was doubtless a result of the transportation of convicts which began in 1850 and continued until 1868. During this period a total of 9,668 convicts, all of whom were males, were brought to the Colony. The high levels of masculinity disclosed by the Censuses of 1891 and 1901 may be attributed to the influx of a predominantly male population following the gold discoveries of 1885 and later years.

The masculinity of Western Australia's population has continued to be high. At 30 June 1971, it stood at 105.52 and was higher than in any other State and significantly higher than the Australian figure of 101.10.

Age. The following table shows the numbers and proportions of the population of Western Australia in selected age groups at each census from 1947 to 1971. The age groups have been chosen as representing, in a general sense, such sectors as the pre-school population, children of school age, minors, women of child-bearing age, the economically active population, and those beyond normal working age.

POPULATION IN SELECTED AGE GROUPS (a)—CENSUSES, 1947 TO 1971

Age last birthday (years)	Number in each age group (b)					Per cent of total				
	Census, 30 June—					Census, 30 June—				
	1947	1954	1961	1966	1971	1947	1954	1961	1966	1971
MALES										
Under 5	31,749	45,350	50,559	53,830	64,003	12.30	13.73	13.47	12.44	12.10
6-12	29,717	44,075	56,195	64,380	75,483	11.51	13.34	14.97	14.88	14.27
13-15	41,261	59,028	78,270	90,409	106,849	15.99	17.87	20.85	20.90	20.20
Under 18	81,352	113,847	141,371	160,461	189,965	31.52	34.46	37.65	37.09	35.91
Under 21	92,636	126,605	157,345	183,031	217,724	35.89	38.32	41.91	42.31	41.15
15-44	116,353	142,694	150,826	183,495	239,732	45.08	43.19	40.17	42.42	45.31
15-64	168,675	208,670	228,248	268,110	334,554	65.36	63.16	60.79	61.98	63.23
65 and over	20,386	22,262	24,593	28,850	34,165	7.90	6.74	6.55	6.67	6.46
All ages	258,076	330,358	375,452	432,569	529,066	100.00	100.00	100.00	100.00	100.00
FEMALES										
Under 6	30,518	43,871	47,888	51,154	60,639	12.49	14.18	13.26	12.31	12.09
6-12	28,911	41,897	54,243	61,118	71,417	11.83	13.54	15.02	14.71	14.24
13-15	40,023	56,210	75,024	86,218	100,622	16.38	18.17	20.77	20.75	20.07
Under 18	78,667	109,142	134,811	152,855	179,532	32.19	35.27	37.33	36.79	35.81
Under 21	90,538	121,393	150,128	173,882	205,636	37.04	39.23	41.57	41.85	41.01
15-44	110,993	131,254	143,056	170,476	216,730	45.41	42.42	39.61	41.03	43.22
15-64	157,458	189,062	213,573	250,092	307,689	64.43	61.10	59.13	60.19	61.37
65 and over	20,235	25,027	30,504	36,279	42,019	8.28	8.09	8.45	8.73	8.38
All ages	244,404	309,413	361,177	415,531	501,403	100.00	100.00	100.00	100.00	100.00
PERSONS										
Under 6	62,267	89,221	98,447	104,984	124,642	12.39	13.95	13.36	12.38	12.10
6-12	58,628	85,972	110,438	125,498	146,900	11.67	13.44	14.99	14.80	14.26
13-15	81,284	115,238	153,294	176,627	207,471	16.18	18.01	20.81	20.83	20.13
Under 18	160,019	222,989	276,182	313,316	369,497	31.85	34.85	37.49	36.94	35.86
Under 21	183,174	247,998	307,473	356,913	423,360	36.45	38.76	41.74	42.08	41.08
15-44	227,346	273,948	293,882	353,971	456,462	45.24	42.82	39.90	41.74	44.30
15-64	326,133	397,732	441,821	518,202	642,243	64.90	62.17	59.98	61.10	62.33
65 and over	40,621	47,289	55,097	65,129	76,184	8.08	7.39	7.48	7.68	7.39
All ages	502,480	639,771	736,629	848,100	1,030,469	100.00	100.00	100.00	100.00	100.00

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 120); those for 1966 and 1971 refer to total population (i.e. including Aborigines). (b) Recorded ages adjusted by the distribution of ages 'not stated'.

AGE DISTRIBUTION OF THE POPULATION (a)—CENSUSES, 1947 TO 1971

Age last birthday (years)	Population in each age group (b)					Percentage distribution				
	Census, 30 June—					Census, 30 June—				
	1947	1954	1961	1966	1971	1947	1954	1961	1966	1971
0-4	52,452	74,978	81,916	86,481	104,994	10.44	11.72	11.12	10.20	10.19
5-9	44,592	67,079	80,754	90,835	103,309	8.87	10.48	10.96	10.71	10.03
10-14	38,682	52,693	77,041	87,453	103,739	7.70	8.24	10.46	10.31	10.07
15-19	39,939	45,251	57,738	80,159	93,426	7.95	7.07	7.84	9.45	9.07
20-24	38,434	43,602	47,877	60,308	93,464	7.63	6.82	6.50	7.11	9.07
25-29	36,126	49,479	44,321	54,739	78,298	7.19	7.73	6.02	6.45	7.60
30-34	38,585	48,520	49,647	50,145	67,914	7.68	7.58	6.74	5.91	6.59
35-39	38,178	42,690	50,634	54,782	61,097	7.60	6.67	6.87	6.46	5.93
40-44	36,084	44,406	43,665	53,838	62,263	7.18	6.94	5.93	6.35	6.04
45-49	32,471	40,636	45,275	45,557	57,756	6.46	6.35	6.15	5.37	5.60
50-54	25,064	35,647	40,376	45,256	46,415	4.99	5.57	5.48	5.34	4.50
55-59	22,606	25,234	34,833	39,827	44,141	4.50	3.94	4.73	4.70	4.28
60-64	18,646	22,267	27,455	33,591	37,469	3.71	3.48	3.73	3.96	3.64
65-69	15,809	17,502	20,240	25,116	30,285	3.15	2.74	2.75	2.96	2.94
70-74	11,934	13,340	15,742	17,497	21,022	2.38	2.09	2.14	2.06	2.04
75 and over	12,878	16,447	19,115	22,516	24,877	2.56	2.57	2.59	2.65	2.41
Total	502,480	639,771	736,629	848,100	1,030,469	100.00	100.00	100.00	100.00	100.00
Under 21	183,174	247,998	307,473	356,913	423,360	36.45	38.76	41.74	42.08	41.08
21-64	278,685	344,484	374,059	426,058	530,925	55.46	53.84	50.78	50.24	51.52
65 and over	40,621	47,289	55,097	65,129	76,184	8.08	7.39	7.48	7.68	7.39
Total	502,480	639,771	736,629	848,100	1,030,469	100.00	100.00	100.00	100.00	100.00

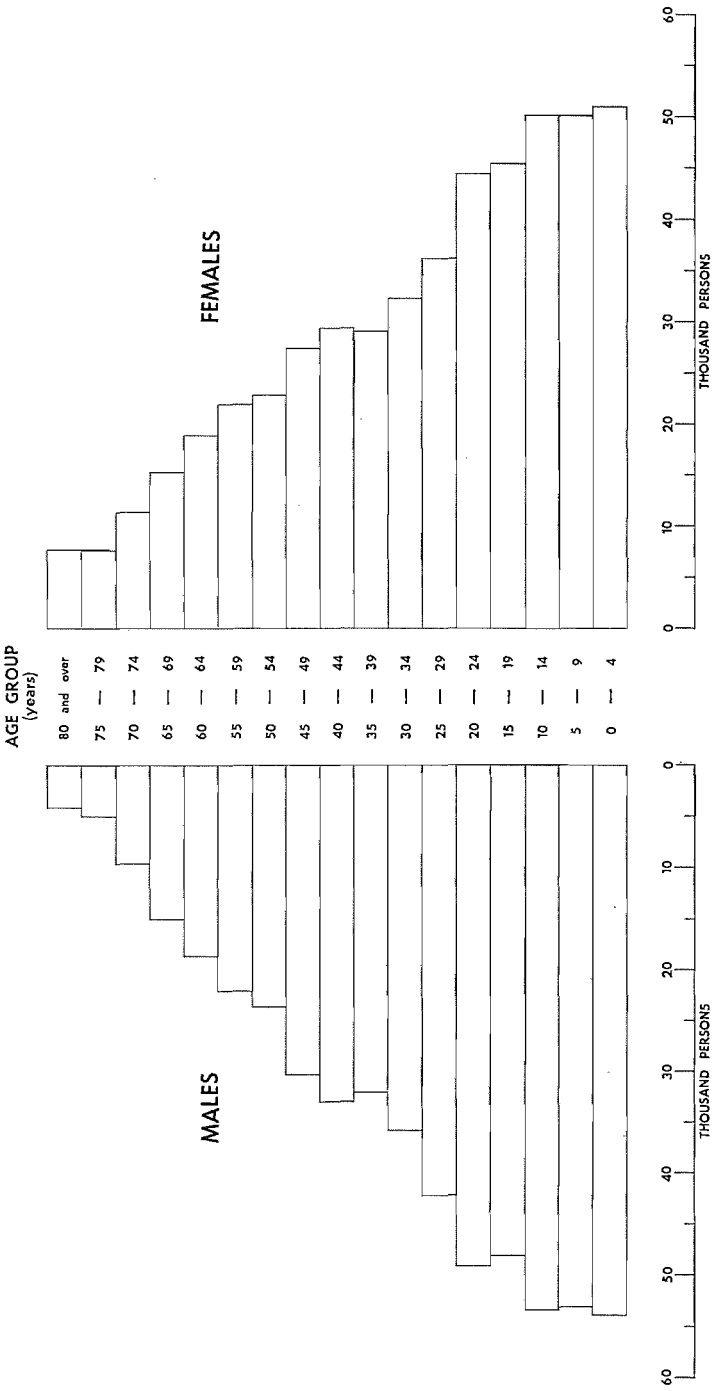
(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 120); those for 1966 and 1971 refer to total population (i.e. including Aborigines). (b) Recorded ages adjusted by the distribution of ages 'not stated'.

AGE DISTRIBUTION OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

Age last birthday (years) (b)	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase since 1966	
							Numerical	Per cent
0-4	86,481	10.20	53,932	51,062	104,994	10.19	18,513	21.41
5-9	90,835	10.71	53,044	50,265	103,309	10.03	12,474	13.73
10-14	87,453	10.31	53,371	50,368	103,739	10.07	16,286	18.62
15-19	80,159	9.45	48,105	45,321	93,426	9.07	13,267	16.55
20-24	60,308	7.11	49,036	44,428	93,464	9.07	33,156	54.98
25-29	54,739	6.45	42,030	36,268	78,298	7.60	23,559	43.04
30-34	50,145	5.91	35,602	32,312	67,914	6.59	17,769	35.44
35-39	54,782	6.46	32,015	29,082	61,097	5.93	6,315	11.53
40-44	53,838	6.35	32,944	29,319	62,263	6.04	8,425	15.65
45-49	45,557	5.37	30,367	27,389	57,756	5.60	12,199	26.78
50-54	45,256	5.34	23,621	22,794	46,415	4.50	1,159	2.56
55-59	39,827	4.70	22,168	21,973	44,141	4.28	4,314	10.83
60-64	33,591	3.96	18,666	18,803	37,469	3.64	3,878	11.54
65-69	25,116	2.96	15,120	15,165	30,285	2.94	5,169	20.58
70-74	17,497	2.06	9,667	11,355	21,022	2.04	3,525	20.15
75-79	12,042	1.42	5,174	7,728	12,902	1.25	860	7.14
80-84	6,510	0.77	2,792	4,805	7,597	0.74	1,087	16.70
85-89	2,933	0.35	1,089	2,088	3,177	0.31	244	8.32
90-94	859	0.10	279	701	980	0.10	121	14.09
95-99	158	0.02	41	165	206	0.02	48	30.38
100 and over	14	0.00	3	12	15	0.00	1	7.14
Total	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

(a) The figures shown for 1966 have been amended to comprise total population, i.e. including Aborigines (see NOTE on page 120). (b) Recorded ages adjusted by the distribution of ages 'not stated'.

Population, by Age Group: Census, 30 June 1971



Birthplace; Nationality. The category 'British' nationality, as used in this table, comprises all persons who, by virtue of Australian legislation relating to nationality and citizenship, were deemed to be British subjects. It includes Australian citizens and citizens of other countries as specified in the legislation. Persons of Irish nationality are also included.

BIRTHPLACE AND NATIONALITY OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

Classification	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase or decrease (b) since 1966	
							Numerical	Per cent
BIRTHPLACE								
Australia—								
Western Australia	564,204	66.53	310,128	307,974	618,102	59.98	53,898	9.55
Elsewhere in Australia	85,105	10.03	65,766	63,328	129,094	12.53	43,989	51.69
Total	649,309	76.56	375,894	371,302	747,196	72.51	97,887	15.08
New Zealand	2,668	0.31	4,315	3,163	7,478	0.73	4,810	180.28
Europe—								
United Kingdom and Re-								
public of Ireland	104,120	12.28	82,193	74,824	157,017	15.24	52,897	50.80
Germany	5,935	0.70	3,582	3,494	7,076	0.69	1,141	19.22
Greece	5,443	0.64	2,760	2,280	5,040	0.49	—403	—7.40
Italy....	28,141	3.32	17,139	13,402	30,541	2.96	2,400	8.53
Netherlands	10,369	1.22	6,245	5,031	11,276	1.09	907	8.75
Poland	4,727	0.56	2,737	1,958	4,695	0.46	—32	—0.68
Yugoslavia	7,501	0.88	6,240	3,919	10,159	0.99	2,658	35.44
Other	10,892	1.28	8,539	5,929	14,468	1.40	3,576	32.83
Total	177,128	20.89	129,435	110,837	240,272	23.32	63,144	35.65
Asia—								
Burma	1,140	0.13	1,527	1,692	3,219	0.31	2,079	182.37
India	3,814	0.45	3,958	3,946	7,904	0.77	4,090	107.24
Malaysia	1,635	0.19	1,670	1,287	2,957	0.29	1,322	80.86
Other	4,564	0.54	4,622	2,905	7,527	0.73	2,963	64.92
Total	11,153	1.32	11,777	9,830	21,607	2.10	10,454	93.73
United States of America	2,063	0.24	2,394	1,594	3,988	0.39	1,925	93.31
Other birthplaces	5,779	0.68	5,251	4,677	9,928	0.96	4,149	71.79
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50
NATIONALITY								
British (c)—								
Born in Australia	649,309	76.56	375,894	371,302	747,196	72.51	97,887	15.08
Born outside Australia	167,501	19.75	122,419	106,819	229,238	22.25	61,737	36.86
Total, British	816,810	96.31	498,313	478,121	976,434	94.76	159,624	19.54
Foreign—								
Dutch	3,985	0.47	2,103	1,801	3,904	0.38	—81	—2.03
German	1,526	0.18	1,089	750	1,839	0.18	313	20.51
Greek	2,565	0.30	1,146	989	2,135	0.21	—430	—16.76
Italian	12,822	1.51	7,661	6,650	14,311	1.39	1,489	11.61
Polish	960	0.11	385	283	668	0.06	—292	—30.42
U.S. American	1,944	0.23	2,189	1,489	3,678	0.36	1,734	89.20
Yugoslav	3,037	0.36	2,691	1,655	4,346	0.42	1,309	43.10
Other	3,824	0.45	6,336	3,671	10,007	0.97	6,183	161.69
Stateless (d)	627	0.07	7,153	5,994	13,147	1.28	n.a.	n.a.
Total, Foreign	31,290	3.69	30,753	23,282	54,035	5.24	22,745	72.69
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

n.a. denotes 'not applicable'.

(a) The figures shown for 1966 have been amended to comprise total population, i.e. including Aborigines (see NOTE on page 120). (b) Minus sign (—) denotes decrease. (c) See letterpress immediately preceding table. (d) The figures shown for 1971 include persons whose nationality was not stated. At the 1966 Census, in the small number of cases where nationality was not stated, allocation of a selected nationality was made in accordance with other information on the census schedule (usually birthplace).

Religion; Marital Status. The Census and Statistics Act provides that there shall be no penalty for failure to answer the question on religion, and a statement to this effect is contained in the census schedule.

RELIGION AND MARITAL STATUS OF THE POPULATION—CENSUSES, 1966 (a) AND 1971

Classification	Census, 30 June 1966 (a)		Census, 30 June 1971					
	Persons	Per cent of total	Males	Females	Persons			
					Number	Per cent of total	Increase or decrease (b) since 1966	
							Numerical	Per cent
RELIGION								
Christian—								
Baptist	10,921	1.29	6,348	6,997	13,345	1.30	2,424	22.20
Brethren	845	0.10	605	659	1,264	0.12	419	45.59
Catholic (c)	100,124	11.81	46,561	46,637	93,198	9.04	-6,926	-6.92
Catholic, Roman (c)	115,857	13.66	89,272	85,520	174,792	16.96	58,935	50.87
Church of England	317,212	37.40	180,677	182,082	362,759	35.20	45,547	14.36
Churches of Christ	12,070	1.42	6,177	7,259	13,436	1.30	1,366	11.32
Congregational	8,375	0.99	3,857	4,401	8,258	0.80	-117	-1.40
Jehovah's Witness	(d)	(d)	2,177	2,657	4,834	0.47	(e)	(e)
Lutheran	5,155	0.61	3,597	3,401	6,998	0.68	1,843	35.75
Methodist	80,965	9.55	41,108	44,175	85,283	8.28	4,318	5.33
Orthodox	11,836	1.40	7,361	6,130	13,491	1.31	1,655	13.98
Presbyterian	44,310	5.22	23,862	24,505	48,367	4.69	4,057	9.16
Salvation Army	4,924	0.58	2,896	3,174	6,070	0.59	1,146	23.27
Seventh-day Adventist	4,430	0.52	2,135	2,684	4,819	0.47	389	8.78
Protestant (undefined)	6,748	0.80	8,056	7,795	15,851	1.54	9,103	134.90
Other (including Christian undefined)	13,065	1.54	8,317	8,796	17,113	1.66	(e)	(e)
Total, Christian	736,837	86.88	433,006	436,872	869,878	84.42	133,041	18.06
Non-Christian—								
Hebrew	2,996	0.35	1,569	1,533	3,102	0.30	106	3.54
Muslim	1,261	0.15	697	330	1,027	0.10	1,501	119.03
Other			1,089	646	1,735	0.17		
Total, Non-Christian	4,257	0.50	3,355	2,509	5,864	0.57	1,607	37.75
Indefinite	2,849	0.34	1,777	1,225	3,002	0.29	153	5.37
No religion	8,203	0.97	54,887	35,474	90,361	8.77	82,158	1,001.56
Total replies	752,146	88.69	493,025	476,080	969,105	94.05	216,959	28.85
No reply	95,954	11.31	36,041	25,323	61,364	5.95	-34,590	-36.05
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50
MARITAL STATUS								
Never married—								
Under 15 years of age	264,499	31.19	160,347	151,695	312,042	30.28	47,543	17.97
15 years of age and over	154,007	18.16	112,323	70,648	182,971	17.76	28,964	18.81
Total	418,506	49.35	272,670	222,343	495,013	48.04	76,507	18.28
Married	372,105	43.88	234,605	231,237	465,842	45.21	93,737	25.19
Married but permanently separ- ated (f)	11,649	1.37	7,378	7,379	14,757	1.43	3,108	26.68
Divorced	7,523	0.89	5,732	5,313	11,045	1.07	3,522	46.82
Widowed	38,317	4.52	8,681	35,131	43,812	4.25	5,495	14.34
Total	429,594	50.65	256,396	279,060	535,456	51.96	105,862	24.64
GRAND TOTAL	848,100	100.00	529,066	501,403	1,030,469	100.00	182,369	21.50

(a) The figures shown for 1966 have been amended to comprise total population, i.e. including Aborigines (see NOTE on page 120). (b) Minus sign (—) denotes decrease. (c) As stated in individual census schedules. (d) Not available; included in *Other (including Christian undefined)*. (e) Not applicable; see footnote (d). (f) Legally or otherwise.

Occupational Status; Industry; Occupation. Classifications of the population according to occupational status, industry, and occupation, as recorded at the Census of 30 June 1971, will be found in Chapter X.

INTERCENSAL INCREASES

The following table shows the population of Western Australia at each census from 1891 to 1971, and the intercensal gains or losses by natural increase and by migration. It also shows the average annual gains or losses in each intercensal period.

POPULATION—ANALYSIS OF INTERCENSAL INCREASES, 1891-1971

Period (a)	Population at beginning of period	Natural increase (b)		Net migration (c)		Total increase		Population at end of period
		Total	Annual average	Total	Annual average	Number	Annual average	
1891-1901 (10 years)	49,782	15,901	1,590	118,441	11,844	134,342	13,434	184,124
1901-1911 (10 years)	184,124	44,246	4,425	53,744	5,374	97,990	9,799	282,114
1911-1921 (10 years)	282,114	51,850	5,185	-1,232	-123	50,618	5,062	332,732
1921-1933 (12½ years)	332,732	60,127	4,908	45,993	3,755	106,120	8,663	438,852
1933-1947 (14 years)	438,852	69,439	4,960	-5,811	-415	63,628	4,545	502,480
1947-1954 (7 years)	502,480	65,576	9,368	71,715	10,245	137,291	19,613	639,771
1954-1961 (7 years)	639,771	79,432	11,348	17,426	2,489	96,858	13,837	736,629
1961-1966 (5 years)	736,629	53,122	10,624	46,922	9,384	100,044	20,009	836,673
1966-1971 (5 years) (d)	848,100	64,454	12,891	117,915	23,583	182,369	36,474	1,030,469

(a) For Census dates, see table on page 121. (b) Excess of births registered over deaths registered, and overseas. Minus sign (—) indicates loss by migration. (c) Figures relate to total population (i.e. including Aborigines); those shown for earlier periods exclude full-blood Aborigines (see NOTE on page 120).

The following table shows the increases in the populations of the several States and Territories, and of Australia as a whole, during each of the eight intercensal periods from 1901 to 1971.

POPULATION—INTERCENSAL INCREASES: STATES AND TERRITORIES, 1901-1971

State or Territory	1901-1911 (a) (10 years)	1911-1921 (10 years)	1921-1933 (12½ years)	1933-1947 (14 years)	1947-1954 (7 years)	1954-1961 (7 years)	1961-1966 (5 years)	1966-1971 (b) (5 years)
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NUMERICAL INCREASE

New South Wales (c)	293,602	453,637	500,476	383,991	438,691	493,484	316,809	363,279
Victoria	114,481	215,729	288,981	234,440	397,640	477,772	289,413	282,134
Queensland	107,684	150,159	191,562	158,881	211,844	200,569	144,857	152,741
South Australia	50,212	86,602	85,789	65,124	151,021	172,246	122,535	78,723
Western Australia	97,990	50,618	106,120	63,628	137,291	96,858	100,044	182,369
Tasmania	18,736	22,569	13,819	29,479	51,674	41,588	21,095	18,977
Northern Territory	-1,501	557	983	6,018	5,601	10,626	10,338	29,886
Australian Capital Territory	(d)	858	6,375	7,958	13,410	28,513	37,185	48,031
AUSTRALIA	681,204	980,729	1,194,105	949,519	1,407,172	1,521,656	1,042,276	1,156,140

PROPORTIONAL INCREASE (per cent)

New South Wales (c)	21.67	27.55	23.83	14.76	14.70	14.41	8.09	8.57
Victoria	9.53	16.40	18.87	12.88	19.35	19.48	9.88	8.76
Queensland	21.62	24.79	25.34	16.77	19.15	15.21	9.54	9.12
South Australia	14.01	21.20	17.33	11.21	23.38	21.61	12.64	7.19
Western Australia	53.22	17.94	31.89	14.50	27.32	15.14	13.58	21.50
Tasmania	10.86	11.80	6.46	12.95	20.10	13.47	6.02	5.11
Northern Territory	-31.20	16.83	25.42	124.08	51.54	64.52	38.15	52.89
Australian Capital Territory	(d)	50.06	247.86	88.95	79.33	94.06	63.21	50.02
AUSTRALIA	18.05	22.01	21.97	14.32	18.57	16.93	9.92	9.97

AVERAGE ANNUAL RATE OF INCREASE (per cent)

New South Wales (c)	1.97	2.46	1.76	0.99	1.98	1.94	1.57	1.66
Victoria	0.91	1.53	1.42	0.87	2.56	2.58	1.90	1.69
Queensland	1.98	2.24	1.86	1.11	2.53	2.04	1.84	1.76
South Australia	1.32	1.94	1.31	0.76	3.05	2.83	2.41	1.40
Western Australia	4.36	1.66	2.29	0.97	3.51	2.03	2.58	3.97
Tasmania	1.04	1.12	0.51	0.87	2.65	1.82	1.18	1.00
Northern Territory	-3.67	1.57	1.87	5.93	6.12	7.37	6.68	8.86
Australian Capital Territory	(d)	4.14	10.71	4.65	8.70	9.93	10.29	8.45
AUSTRALIA	1.67	2.01	1.63	0.96	2.46	2.26	1.91	1.92

(a) Minus sign (—) denotes decrease. (b) See footnote (d) to previous table. (c) Includes Australian Capital Territory prior to 1911. (d) Part of New South Wales prior to 1911.

GEOGRAPHICAL DISTRIBUTION

Urban, Rural and Migratory Population

At the 1971 Census a boundary was defined for each population cluster of 1,000 or more persons. These clusters are named 'urban centres' and the population enumerated in them is classified as urban for statistical purposes.

In determining the boundary of an urban centre with a population of 25,000 or more, all contiguous Census collectors' districts which were found to have a minimum population density of 500 per square mile at the Census were included. Some areas of lower density were classified as urban in accordance with certain other specified criteria. The term *Major urban* is applied to those centres which had a population of 100,000 or more, and supersedes the term *Metropolitan* as used at previous censuses. Urban Perth is the only such centre in Western Australia.

Around each urban centre with a population of at least 100,000 a further boundary was defined to contain the anticipated development of the urban centre and associated smaller urban centres for a period of at least twenty years. This boundary delimits an area which is now, or is expected to be, in close social and economic contact with the urban centre. It is a fixed boundary, as distinct from the boundary of the urban centre which moves from census to census as urbanisation proceeds. In Western Australia, the area within this fixed boundary is described as the Perth Statistical Division (see maps immediately preceding the Index).

Urban Perth at 30 June 1971 comprised the Cities of Fremantle, Nedlands, Perth, South Perth, and Subiaco; the Towns of Claremont, Cottesloe, East Fremantle, and Mosman Park; the Shires of Bassendean and Peppermint Grove; parts of the Cities of Melville and Stirling, parts of the Towns of Canning and Cockburn, and parts of the Shires of Armadale-Kelmscott, Bayswater, Belmont, Gosnells, Kalamunda, Mundaring, Swan, and Wanneroo. It covered an approximate area of 204 square miles, compared with 148 square miles (designated Perth Metropolitan Area) at 30 June 1966. The area of the Perth Statistical Division was 2,073 square miles.

In delimiting urban centres with a population of less than 25,000 persons all continuous urban growth is included (which, in small urban centres, would not necessarily occur if the density criterion were applied), together with any close but non-contiguous development which could be clearly regarded as part of the centre.

A full description of the criteria adopted in the delimitation of urban centres appears in *Field Count Statement No. 7—Population: Local Government Areas and Towns, Western Australia* published February 1972 by the Commonwealth Statistician, Canberra.

Rural population represents persons enumerated in the area not included in urban centres. The term *Migratory* refers to persons (both passengers and crew) who, at midnight on Census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before Census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

The following tables show, for 1966 and 1971, a division of the population of each State and Territory into *Major urban*, *Other urban*, *Rural* and *Migratory*. The classification *Major urban* represents the population of the urban centres of Sydney (2,725,064 at 30 June 1971), Newcastle (255,162) and Wollongong (188,679), as well as part of Canberra (15,434), in New South Wales; Melbourne (2,394,117) and Geelong (115,181) in Victoria; Brisbane (818,423) in Queensland; Adelaide (809,482) in South Australia; Perth (641,800) in Western Australia; Hobart (129,928) in Tasmania; and part of Canberra (140,864) in the Australian Capital Territory.

In the intercensal period each of the States and Territories showed an increase in urban population, and all except the Northern Territory experienced a decline in rural population. In Australia as a whole, urban population increased by 1,296,448 (13.48 per cent) and rural population fell by 137,833 (7.02 per cent).

URBAN AND RURAL POPULATIONS (a)—STATES AND TERRITORIES
CENSUSES, 1966 AND 1971

State or Territory	Urban			Rural	Migratory	Total population
	Major	Other	Total			
CENSUS, 30 JUNE 1966						
New South Wales	2,843,395	816,767	3,660,162	568,675	9,064	4,237,901
Victoria	2,213,461	540,078	2,753,539	463,690	2,988	3,220,217
Queensland	716,402	557,841	1,274,243	398,018	2,063	1,674,324
South Australia	728,279	174,964	903,243	190,167	1,574	1,094,984
Western Australia	500,246	142,111	642,357	202,704	3,039	848,100
Tasmania	119,469	141,513	260,982	109,779	675	371,436
Northern Territory .....	.....	30,166	30,166	26,043	295	56,504
Australian Capital Territory	92,311	.....	92,311	3,721	.....	96,032
AUSTRALIA	7,213,563	2,403,440	9,617,003	1,962,797	19,698	11,599,498
CENSUS, 30 JUNE 1971						
New South Wales	3,176,980	898,937	4,075,917	519,304	5,959	4,601,180
Victoria	2,509,298	561,493	3,070,791	429,257	2,303	3,502,351
Queensland	818,423	629,601	1,448,024	375,376	3,665	1,827,065
South Australia	809,482	183,187	992,669	179,148	1,890	1,173,707
Western Australia	641,800	198,395	840,195	187,657	2,617	1,030,469
Tasmania	129,928	159,652	289,580	100,418	415	390,413
Northern Territory .....	.....	55,411	55,411	30,605	374	86,390
Australian Capital Territory	(b)140,864	.....	(b)140,864	3,199	.....	144,063
AUSTRALIA	8,226,775	2,686,676	10,913,451	1,824,964	17,223	12,755,638

(a) Figures relate to all persons enumerated, i.e. including Aborigines. See page 128 for definitions of *Urban*, *Rural*, etc. (b) The total population of urban Canberra was 156,298, including 15,434 persons in Queanbeyan Municipality (New South Wales).

URBAN AND RURAL POPULATIONS (a)—STATES AND TERRITORIES
PERCENTAGE DISTRIBUTION: CENSUSES, 1966 AND 1971

State or Territory	Urban			Rural	Migratory	Total
	Major	Other	Total			
CENSUS, 30 JUNE 1966						
New South Wales	67.09	19.27	86.37	13.42	0.21	100.00
Victoria	68.74	16.77	85.51	14.40	0.09	100.00
Queensland	42.79	33.32	76.10	23.77	0.12	100.00
South Australia	66.51	15.97	82.48	17.36	0.14	100.00
Western Australia	58.98	16.76	75.74	23.90	0.36	100.00
Tasmania	32.16	38.10	70.26	29.56	0.18	100.00
Northern Territory .....	....	53.39	53.39	46.09	0.52	100.00
Australian Capital Territory	96.13	....	96.13	3.87	....	100.00
AUSTRALIA	62.18	20.72	82.90	16.92	0.16	100.00
CENSUS, 30 JUNE 1971						
New South Wales	69.05	19.51	88.56	11.32	0.13	100.00
Victoria	71.65	16.03	87.68	12.26	0.07	100.00
Queensland	44.79	34.46	79.25	20.55	0.20	100.00
South Australia	68.97	15.61	84.58	15.26	0.16	100.00
Western Australia	62.28	19.25	81.54	18.21	0.26	100.00
Tasmania	33.28	40.89	74.17	25.72	0.11	100.00
Northern Territory .....	....	64.14	64.14	35.43	0.43	100.00
Australian Capital Territory	97.78	....	97.78	2.22	....	100.00
AUSTRALIA	64.50	21.06	85.56	14.31	0.14	100.00

(a) See footnote (a) to previous table.

Population of Urban Centres and Bounded Localities

Population clusters where 1,000 or more persons were enumerated at the 1971 Census are designated 'urban centres' and are marked (U) in the following table. The other areas shown are described as 'bounded localities'. In delimiting urban Perth special

criteria were applied (see page 128). For areas other than urban Perth, boundaries were determined by examination of the most recent available aerial photographs in order to identify as closely as possible the periphery of the built-up area. Those centres which had a population of more than 200 persons at the 1971 Census are included in the table.

POPULATION—URBAN CENTRES AND BOUNDED LOCALITIES
CENSUSES, 1966 AND 1971

Urban centre or bounded locality	Population (a)				Intercensal increase or decrease (b)	
	Census, 30 June—					
	1966	1971			Number	Per cent
		Persons	Males	Females			Persons
Albany (U)	11,440	6,412	6,689	13,101	1,661	14.52
Augusta	n.a.	166	184	350	n.a.	n.a.
Australind	n.a.	202	216	418	n.a.	n.a.
Beverley	883	383	402	785	—98	—11.10
Boddington	n.a.	182	169	351	n.a.	n.a.
Boyanup	n.a.	154	149	303	n.a.	n.a.
Boyup Brook	711	353	335	688	—23	—3.23
Bridgetown (U)	1,569	773	763	1,536	—33	—2.10
Brookton	660	356	303	659	—1	—0.15
Broome (U)	1,874	1,159	890	2,049	175	9.34
Bruce Rock	775	373	356	729	—46	—5.94
Brunswick Junction....	878	486	416	902	24	2.73
Bunbury (U)....	15,467	8,900	8,879	17,779	2,312	14.95
Busselton (U)	4,278	2,416	2,567	4,983	705	16.48
Byford	n.a.	317	310	627	n.a.	n.a.
Capel	n.a.	332	325	657	n.a.	n.a.
Carnamah	n.a.	252	214	466	n.a.	n.a.
Carnarvon (U)	3,086	2,140	2,102	4,242	1,156	37.46
Chidlow	n.a.	114	90	204	n.a.	n.a.
Collie (U)	7,669	3,321	3,413	6,734	—935	—12.19
Coolgardie	473	317	307	624	151	31.92
Coorow	n.a.	113	102	215	n.a.	n.a.
Corrigin	797	385	399	784	—13	—1.63
Cranbrook	n.a.	204	188	392	n.a.	n.a.
Cue	n.a.	142	145	287	n.a.	n.a.
Cunderdin	800	449	424	873	73	9.13
Dalwallinu	n.a.	371	353	724	n.a.	n.a.
Dampier (U)	1,080	2,620	965	3,585	2,505	231.94
Darkan	n.a.	126	130	256	n.a.	n.a.
Deanmill	n.a.	182	142	324	n.a.	n.a.
Denmark	800	325	333	658	—142	—17.75
Derby (U)	1,843	1,278	1,260	2,538	695	37.71
Dongara	n.a.	183	148	331	n.a.	n.a.
Donnybrook....	981	494	504	998	17	1.73
Dowerin	376	176	175	351	—25	—6.65
Dumbleyung....	n.a.	190	186	376	n.a.	n.a.
Dwellingup	n.a.	267	218	485	n.a.	n.a.
Eaton....	n.a.	377	408	785	n.a.	n.a.
Esperance (U)	2,698	2,510	2,364	4,874	2,176	80.65
Exmouth (U)	881	1,572	1,098	2,670	1,789	203.06
Geraldton (U)	12,196	7,909	7,548	15,457	3,261	26.74
Gingin	n.a.	175	169	344	n.a.	n.a.
Gnowangerup (U)	1,014	506	503	1,009	—5	—0.49
Goldsworthy (U)	n.a.	658	362	1,020	n.a.	n.a.
Goomalling	670	387	370	757	87	12.99
Greenbushes	n.a.	132	143	275	n.a.	n.a.
Halls Creek	n.a.	319	359	678	n.a.	n.a.
Harvey (U)	2,066	1,175	1,162	2,337	271	13.12
Jarrahdale	n.a.	206	185	391	n.a.	n.a.
Kalgoorlie-Boulder (U)	19,980	10,992	9,873	20,865	885	4.43
Kambalda (U)	n.a.	2,406	1,818	4,224	n.a.	n.a.
Karratha (U)	n.a.	1,036	802	1,838	n.a.	n.a.
Katanning (U)	3,596	1,744	1,850	3,594	—2	—0.06
Kellerberrin (U)	1,370	658	648	1,306	—64	—4.67
Kojonup	980	511	472	983	3	0.31
Kondinin	n.a.	170	141	311	n.a.	n.a.
Koolyanobbing	n.a.	167	139	306	n.a.	n.a.
Koorda	n.a.	218	193	411	n.a.	n.a.
Kulin	n.a.	161	148	309	n.a.	n.a.
Kununurra (U)	975	704	536	1,240	265	27.18
Kwinana New Town (U) (c)	4,144	5,078	5,030	10,108	5,964	143.92

POPULATION—URBAN CENTRES AND BOUNDED LOCALITIES
CENSUSES, 1966 AND 1971—continued

Urban centre or bounded locality	Population (a)				Intercensal increase or decrease (b)	
	Census, 30 June—					
	1966	1971			Number	Per cent
	Persons	Males	Females	Persons		
Lake Grace	545	304	253	557	12	2.20
Lake MacLeod	n.a.	232	67	299	n.a.	n.a.
Lancelin	n.a.	111	99	210	n.a.	n.a.
Leonora	338	300	294	594	256	75.74
Mandurah (U)	2,730	2,503	2,559	5,062	2,332	85.42
Manjimup (U)	3,186	1,710	1,816	3,526	340	10.67
Marble Bar	n.a.	211	183	394	n.a.	n.a.
Margaret River	632	332	333	665	33	5.22
Meekatharra	577	512	415	927	350	60.66
Merredin (U)	3,601	1,872	1,681	3,553	—48	—1.33
Mingenew	n.a.	275	229	504	n.a.	n.a.
Moora (U)	1,263	735	674	1,409	146	11.56
Morawa	881	494	393	887	6	0.68
Mount Barker (U)	1,595	817	778	1,595	....	....
Mount Magnet	683	366	270	636	—47	—6.88
Mukinbudin	n.a.	160	161	321	n.a.	n.a.
Mullaloo	n.a.	125	111	236	n.a.	n.a.
Mullewa	833	469	409	878	45	5.40
Mundaring	n.a.	295	284	579	n.a.	n.a.
Mundijong	n.a.	122	114	236	n.a.	n.a.
Nannup	591	285	228	513	—78	—13.20
Narembene	n.a.	228	214	442	n.a.	n.a.
Narrogin (U)	4,878	2,398	2,451	4,849	—29	—0.59
Newman (U)	n.a.	2,922	984	3,906	n.a.	n.a.
Norseman (U)	1,911	1,011	778	1,789	—122	—6.38
Northam (U)	7,413	3,634	3,483	7,117	—296	—3.99
Northampton	701	384	379	763	62	8.84
Northcliffe	n.a.	121	103	224	n.a.	n.a.
Nyamup	n.a.	125	99	224	n.a.	n.a.
Onslow	n.a.	181	168	349	n.a.	n.a.
Paraburdoo (U)	n.a.	2,519	458	2,977	n.a.	n.a.
Pemberton	931	435	380	815	—116	—12.46
Perenjori	n.a.	163	127	290	n.a.	n.a.
Perth (U)	500,246	317,593	324,207	641,800	141,554	28.30
Pingelly	969	464	454	918	—51	—5.26
Pinjarra (U)	889	561	630	1,191	302	33.97
Port Hedland (U)	1,920	4,330	2,899	7,229	5,309	276.51
Quairading	687	442	414	856	169	24.60
Ravensthorpe	n.a.	116	109	225	n.a.	n.a.
Rockingham (U)	(d) 5,039	6,197	5,832	12,029	6,990	138.72
Roebourne (U)	n.a.	808	707	1,515	n.a.	n.a.
Roleystone (U)	n.a.	570	579	1,149	n.a.	n.a.
Shark Bay	n.a.	187	136	323	n.a.	n.a.
Southern Cross	853	445	450	895	42	4.92
Tambellup	n.a.	218	188	406	n.a.	n.a.
Tammin	n.a.	184	176	360	n.a.	n.a.
Three Springs	n.a.	286	268	554	n.a.	n.a.
Tom Price (U)	549	2,061	1,365	3,426	2,877	524.04
Toodyay	710	295	286	581	—129	—18.17
Trayning	n.a.	108	101	209	n.a.	n.a.
Wagin (U)	1,753	824	740	1,564	—189	—10.78
Walpole	n.a.	120	102	222	n.a.	n.a.
Wanneroo (U)	n.a.	768	758	1,526	n.a.	n.a.
Waroona (U)	1,013	579	583	1,162	149	14.71
Wickepin	n.a.	161	133	294	n.a.	n.a.
Williams	n.a.	229	216	445	n.a.	n.a.
Wittenoom Gorge	878	243	179	422	—456	—51.94
Wongan Hills	763	453	428	881	118	15.47
Wundowie (U)	1,040	554	488	1,042	2	0.19
Wyalkatchem	625	291	282	573	—52	—8.32
Wyndham (U)	1,421	849	666	1,515	94	6.62
Yarloop	476	261	258	519	43	9.03
York (U)	1,432	609	568	1,177	—255	—17.81

n.a. denotes 'not available' or 'not applicable'.

(a) Figures relate to total population, i.e. including Aborigines. (b) Minus sign (—) denotes decrease. (c) Described as Medina-Calista at the 1966 Census. (d) Comprises population of urban centres of Rockingham-Safety Bay and Kwinana Industrial as delimited at the 1966 Census; incorporated into urban Rockingham at the 1971 Census.

Population in Statistical Divisions

Western Australia is divided into a number of municipal districts for the purposes of local government administration. These districts, of which there were 140 at 30 June 1971, are used as the basis of presentation of data derived not only from the Census of Population and Housing but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form. The Statistical Divisions and their component local government areas are shown on the maps immediately preceding the Index.

In 1929, when statistics were first presented according to Statistical Divisions, Western Australia was divided into seven such areas. At the 1971 Census there were ten Statistical Divisions, and these have been used as the basis of compilation of the particulars in the following tables. The figures shown refer to the areas contained within the boundaries of the several Divisions as they existed at the Census of 30 June 1971.

STATISTICAL DIVISIONS—POPULATION AT EACH CENSUS FROM 1911
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
POPULATION ('000)								
Perth Statistical Division	116.2	170.2	230.3	303.0	395.0	475.4	559.3	703.2
Other Divisions—								
South-West	27.0	34.4	50.4	52.0	68.6	71.6	73.0	77.3
Southern Agricultural	15.9	20.5	27.0	24.9	36.1	41.6	44.8	45.3
Central Agricultural	31.5	40.5	53.6	43.8	55.9	57.6	58.8	53.7
Northern Agricultural	13.4	17.7	26.6	24.7	32.1	35.8	38.8	42.8
Eastern Goldfields	55.0	33.7	33.2	37.7	34.6	34.1	35.1	42.8
Central	9.57	4.97	7.87	6.37	4.79	3.96	4.62	7.42
North-West	2.13	2.07	2.61	2.64	4.22	4.56	9.05	11.8
Pilbara	2.46	1.41	1.84	1.65	2.65	3.24	8.91	29.0
Kimberley (b)	1.96	2.18	2.13	2.77	3.54	5.67	12.7	14.6
Total (b)	158.9	157.3	205.3	196.5	242.5	258.2	285.8	324.7
Total, all Divisions (b)	275.1	327.5	435.7	499.5	637.5	733.6	845.1	1,027.9
Migratory (b)	7.02	5.19	3.20	2.98	2.27	3.02	3.04	2.62
WESTERN AUSTRALIA	282.1	332.7	438.9	502.5	639.8	736.6	848.1	1,030.5

PROPORTION OF STATE TOTAL (per cent)

Perth Statistical Division	41.18	51.16	52.49	60.29	61.75	64.54	65.95	68.24
Other Divisions—								
South-West	9.57	10.33	11.49	10.34	10.72	9.72	8.61	7.51
Southern Agricultural	5.63	6.16	6.15	4.96	5.65	5.65	5.28	4.39
Central Agricultural	11.16	12.16	12.22	8.71	8.74	7.82	6.94	5.21
Northern Agricultural	4.75	5.32	6.06	4.91	5.01	4.86	4.58	4.15
Eastern Goldfields	19.51	10.13	7.57	7.51	5.40	4.63	4.13	4.15
Central	3.39	1.49	1.79	1.27	0.75	0.54	0.54	0.72
North-West	0.75	0.62	0.60	0.52	0.66	0.62	1.07	1.14
Pilbara	0.87	0.42	0.42	0.33	0.41	0.44	1.05	2.81
Kimberley (b)	0.70	0.65	0.48	0.55	0.55	0.77	1.50	1.42
Total (b)	56.33	47.28	46.78	39.11	37.90	35.05	33.69	31.51
Total, all Divisions (b)	97.51	98.44	99.27	99.41	99.65	99.59	99.64	99.75
Migratory (b)	2.49	1.56	0.73	0.59	0.35	0.41	0.36	0.25
WESTERN AUSTRALIA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) Figures relate to total population (i.e. including Aborigines); those shown for 30 June 1961 and earlier exclude full-blood Aborigines (see NOTE on page 120). (b) At censuses prior to 1954, the pearling fleet based on Broome was classified as *Migratory* (see letterpress on page 128). The estimated population involved was 2,500 in 1911; 1,500 in 1921; 800 in 1933; and 200 in 1947. From 1954, pearling crews have been included in the population of Broome.

STATISTICAL DIVISIONS—POPULATION (a) AT CENSUSES, 1966 AND 1971

Statistical Division	Census, 30 June 1966				Census, 30 June 1971			
	Males	Females	Persons	Masculinity (b)	Males	Females	Persons	Masculinity (b)
Perth Statistical Division	275,122	284,176	559,298	96·81	349,453	353,746	703,199	98·79
Other Divisions—								
South-West	37,540	35,443	72,983	105·92	39,412	37,935	77,347	103·89
Southern Agricultural	23,496	21,312	44,808	110·25	23,548	21,733	45,281	108·35
Central Agricultural	31,628	27,192	58,820	116·31	28,590	25,071	53,661	114·04
Northern Agricultural	21,061	17,756	38,817	118·61	23,044	19,760	42,804	116·62
Eastern Goldfields	19,000	16,062	35,062	118·29	23,264	19,505	42,769	119·27
Central	2,640	1,980	4,620	133·33	5,108	2,312	7,420	220·93
North-West	5,747	3,299	9,046	174·20	6,729	5,055	11,784	133·12
Pilbara	6,350	2,557	8,907	248·34	19,385	9,600	28,985	201·93
Kimberley	7,476	5,224	12,700	143·11	8,225	6,377	14,602	128·98
Total	154,938	130,825	285,763	118·43	177,305	147,348	324,653	120·33
Total, all Divisions	430,060	415,001	845,061	103·63	526,758	501,094	1,027,852	105·12
Migratory (c)	2,509	530	3,039	473·40	2,308	309	2,617	746·93
WESTERN AUSTRALIA	432,569	415,531	848,100	104·10	529,066	501,403	1,030,469	105·52

(a) Figures relate to total population, i.e. including Aborigines. (b) Number of males to each 100 females. (c) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

STATISTICAL DIVISIONS—ANALYSIS OF POPULATION INCREASE (a)
30 JUNE 1966 TO 30 JUNE 1971

Statistical Division	Intercensal increase of population (b)				
	By natural increase (c)	By migration	Total		
			Number	Per cent	Average annual rate (per cent)
Perth Statistical Division	37,507	106,394	143,901	25·73	4·69
Other Divisions—					
South-West	5,037	—673	4,364	5·98	1·17
Southern Agricultural	4,011	—3,538	473	1·06	0·21
Central Agricultural	5,445	—10,604	—5,159	—8·77	—1·82
Northern Agricultural	4,478	—491	3,987	10·27	1·97
Eastern Goldfields	3,635	4,072	7,707	21·98	4·05
Central	506	2,294	2,800	60·61	9·94
North-West	1,061	1,677	2,738	30·27	5·43
Pilbara	1,408	18,670	20,078	225·42	26·62
Kimberley	1,366	536	1,902	14·98	2·83
Total	26,947	11,943	38,890	13·61	2·58
Total, all Divisions	64,454	118,337	182,791	21·63	3·99
Migratory (d)	n.a.	—422	—422	—13·89	n.a.
WESTERN AUSTRALIA	64,454	117,915	182,369	21·50	3·97

n.a. denotes 'not applicable'.

(a) Figures relate to total population, i.e. including Aborigines. (b) Minus sign (—) denotes decrease. (c) Excess of births registered over deaths registered. (d) See note (c) to previous table.

The population of the Perth Statistical Division at the Census of 30 June 1971 was 703,199, or 68·2 per cent of the State total, compared with 559,298 (65·9 per cent) five years earlier, an increase of 143,901 persons or 25·7 per cent. The State's natural increase between the Censuses was 64,454 of which the Perth Statistical Division contributed 37,507. In addition, this Division experienced a net gain by migration of 106,394. The larger towns of the Agricultural and South-West Statistical Divisions also showed substantial population increases, the greatest being those of Geraldton (3,261 persons; or 26·7 per cent), Bunbury (2,312; 15·0 per cent) and Albany (1,661; 14·5 per cent).

The total population in the area outside the Perth Statistical Division rose by 38,890 or 13·6 per cent. The natural increase recorded in the area was 26,947, so that there was a gain of 11,943 persons by migration. Of the total increase of 38,890 persons, the Pilbara Division accounted for more than half with a population gain of 20,078 and showed the greatest proportional increase, 225·4 per cent. Other Divisions showing an increase were Eastern Goldfields, 7,707 (22·0 per cent) ; South-West, 4,364 (6·0 per cent) ; Northern Agricultural, 3,987 (10·3 per cent); Central, 2,800 (60·6 per cent); North-West, 2,738 (30·3 per cent); Kimberley 1,902 (15·0 per cent); and Southern Agricultural, 473 (1·1 per cent). The Central Agricultural Division experienced a decline in population with a loss of 5,159 persons, or 8·8 per cent.

The Eastern Goldfields, Central and Pilbara Statistical Divisions together comprised an area of 638,485 square miles (or almost two-thirds of the State) and had a population of only 79,174 persons at the Census of 30 June 1971. A low rainfall renders much of it virtually uninhabitable and desert or near-desert conditions prevail over some 350,000 square miles which includes much of the eastern and northern parts of the area and extends into the southern portion of the Kimberley Statistical Division. Almost no part of this desert area has an annual rainfall greater than ten inches and a considerable proportion has much less. Of the total population of 79,174 persons recorded in the three Divisions at the Census, nearly four-fifths were enumerated in the urban centres of Kalgoorlie-Boulder (20,865), Port Hedland (7,229), Esperance (4,874), Kambalda (4,224), Newman (3,906), Dampier (3,585), Tom Price (3,426), Paraburdoo (2,977), Karratha (1,838), Norseman (1,789), Roebourne (1,515) and Goldsworthy (1,020), and the townships of Meekatharra (927), Southern Cross (895), Mount Magnet (636), Coolgardie (624), Leonora (594), Wittenoom Gorge (422), Marble Bar (394), Koolyanobbing (306), Cue (287) and Ravensthorpe (225).

Population of South-West Land Division

The South-West Land Division, as defined in the *Land Act, 1933-1972*, often has particular importance in matters of legislation and administration. Its boundaries are almost coincident with those of the area formed by the aggregation of the Perth Statistical Division and the South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions. It embraces an area of 98,305 square miles, a little more than one-tenth of the whole State (975,920 square miles), and had a population of 922,700 persons at the 1971 Census, equivalent to 89·5 per cent of the State total, compared with 774,800 (91·4 per cent) in 1966.

Population North of 26° S. Latitude

For administrative and other purposes, the portion of the State lying north of the 26th parallel of latitude frequently has special significance. This area, which embraces part of the Central Statistical Division, almost all of the North-West Statistical Division, and the whole of the Pilbara and Kimberley Statistical Divisions, is 529,486 square miles in extent and is therefore somewhat greater in area than half the entire State. It had a population of 31,053 persons at the 1966 Census and 58,616 in 1971. Of this total, almost three-quarters were enumerated in the ports and other coastal settlements of Port Hedland (7,229), Carnarvon (4,242), Dampier (3,585), Exmouth (2,670), Derby (2,538), Broome (2,049), Karratha (1,838), Roebourne (1,515), Wyndham (1,515), Onslow (349), Shark Bay (323), and Lake MacLeod (299), the iron-ore mining centres of Newman (3,906), Tom Price (3,426), Paraburdoo (2,977) and Goldsworthy (1,020), the Ord River agricultural settlement at Kununurra (1,240), and the townships of Halls Creek (678), Wittenoom Gorge (422) and Marble Bar (394).

POPULATION DENSITY

Urban Perth (see letterpress *Urban, Rural and Migratory Population* on page 128) is the most densely populated part of the State. At the Census of 30 June 1971 it had a population of 641,800 persons and an area of approximately 204 square miles, representing a density of about 3,146 persons per square mile. Among the Statistical Divisions, Perth with a

population of 703,199 and 2,073 square miles in area showed the highest density, 339 persons per square mile. The Central Statistical Division was the most sparsely populated with an area of 218,010 square miles (more than one-fifth of the entire State) and a Census population of only 7,420 persons, equivalent to an average of one person to every thirty-one square miles.

STATISTICAL DIVISIONS—AREA, POPULATION AND DENSITY: CENSUS, 30 JUNE 1971

Statistical Division	Area		Population				
	Square miles	Per cent of total	Males	Females	Persons		
					Number	Per cent of total	Density (per square mile)
Perth Statistical Division	2,073	0·21	349,453	353,746	703,199	68·24	339·22
Other Divisions—							
South-West	11,031	1·13	39,412	37,935	77,347	7·51	7·01
Southern Agricultural	22,046	2·26	23,548	21,733	45,281	4·39	2·05
Central Agricultural	30,270	3·10	28,590	25,071	53,661	5·21	1·77
Northern Agricultural	32,041	3·28	23,044	19,760	42,804	4·15	1·34
Eastern Goldfields	249,013	25·52	23,264	19,505	42,769	4·15	0·17
Central	218,010	22·34	5,108	2,312	7,420	0·72	0·03
North-West	77,612	7·95	6,729	5,055	11,784	1·14	0·15
Pilbara	171,462	17·57	19,385	9,600	28,985	2·81	0·17
Kimberley	162,363	16·64	8,225	6,377	14,602	1·42	0·09
Total	973,847	99·79	177,305	147,348	324,653	31·51	0·33
Total, all Divisions	975,920	100·00	526,758	501,094	1,027,852	99·75	1·05
Migratory (a)	n.a.	n.a.	2,308	309	2,617	0·25	n.a.
WESTERN AUSTRALIA	975,920	100·00	529,066	501,403	1,030,469	100·00	1·06

n.a. denotes 'not applicable'.

(a) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

Western Australia had a population density at the 1971 Census of only 1·06 persons per square mile, compared with an average of 4·30 for Australia as a whole. Victoria was the most densely populated State, having an average of 39·85 persons per square mile.

AREA, POPULATION AND DENSITY—STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

State or Territory	Area		Population				
	Square miles	Per cent of total	Males	Females	Persons		
					Number	Per cent of total	Density (per square mile)
New South Wales	309,433	10·43	2,307,210	2,293,970	4,601,180	36·07	14·87
Victoria	87,884	2·96	1,750,061	1,752,290	3,502,351	27·46	39·85
Queensland	667,000	22·47	921,665	905,400	1,827,065	14·32	2·74
South Australia	380,070	12·81	586,051	587,656	1,173,707	9·20	3·09
Western Australia	975,920	32·88	529,066	501,403	1,030,469	8·08	1·06
Tasmania	26,383	0·89	196,442	193,971	390,413	3·06	14·80
Northern Territory	520,280	17·53	48,627	37,763	86,390	0·68	0·17
Australian Capital Territory	939	0·03	73,589	70,474	144,063	1·13	153·42
AUSTRALIA	2,967,909	100·00	6,412,711	6,342,927	12,755,638	100·00	4·30

ABORIGINAL POPULATION

Reference is made on pages 120 and 121 to the exclusion of *full-blood* Aborigines from the tabulations of census data prior to 1971. Aborigines have, however, been enumerated at all censuses of the Commonwealth, although the degree of coverage and information obtained have varied substantially since 1911. Since the Census taken in 1933, the adequacy of the particulars obtained has improved progressively, as a result of an increasing number of Aborigines coming into contact with more populated areas.

At the 1971 Census the question relating to a person's race differed from that asked at previous censuses, and the figures shown in the tables in this section cannot be compared with those published in the Year Book for 1973 and earlier issues.

In 1971 the aim was to ascertain the race with which the respondent identified himself, by asking him to state his racial origin and, if of mixed origin, to indicate the one to which he considered himself to belong. The 1971 Census data concerning Aboriginal population therefore refer to persons who described themselves as being of *Aboriginal origin*.

The information shown in the following tables has been selected from a bulletin *The Aboriginal Population* published by the Commonwealth Statistician, Canberra. The bulletin contains statistics dealing with a range of characteristics of the Aboriginal population in each State and Territory and in Australia as a whole at the 1971 Census.

Details of the distribution of the Aboriginal population between urban and rural areas at the 1971 Census are given in the following table.

ABORIGINAL POPULATION (a)—URBAN, RURAL AND MIGRATORY (b)
WESTERN AUSTRALIA AND AUSTRALIA: CENSUS, 30 JUNE 1971

Classification	Western Australia				Australia			
	Males	Females	Persons		Males	Females	Persons	
			Number	Per cent of total			Number	Per cent of total
Urban—								
Major	1,094	1,137	2,231	10.19	7,775	7,892	15,667	14.74
Other	3,227	3,287	6,514	29.74	15,137	15,457	30,594	28.78
Total, urban	4,321	4,424	8,745	39.93	22,912	23,349	46,261	43.52
Rural	6,921	6,223	13,144	60.01	30,975	29,012	59,987	56.44
Migratory	8	6	14	0.06	32	10	42	0.04
GRAND TOTAL	11,250	10,653	21,903	100.00	53,919	52,371	106,290	100.00

(a) Persons described as being of *Aboriginal origin*.

(b) See letterpress on page 128.

The following table shows the Aboriginal population of Western Australia at the Census of 30 June 1971 according to Statistical Division.

ABORIGINAL POPULATION (a)—STATISTICAL DIVISIONS
WESTERN AUSTRALIA: CENSUS, 30 JUNE 1971

Statistical Division	Males	Females	Persons	
			Number	Per cent of total
Perth Statistical Division	1,355	1,317	2,672	12.20
Other Divisions—				
South-West	334	308	642	2.93
Southern Agricultural	684	579	1,263	5.77
Central Agricultural	1,063	993	2,056	9.39
Northern Agricultural	1,003	825	1,828	8.35
Eastern Goldfields	980	1,000	1,980	9.04
Central	756	727	1,483	6.77
North-West	697	637	1,334	6.09
Pilbara	1,193	1,133	2,326	10.62
Kimberley	3,177	3,128	6,305	28.79
Total	9,887	9,330	19,217	87.74
Total, all Divisions	11,242	10,647	21,889	99.94
Migratory (b)	8	6	14	0.06
WESTERN AUSTRALIA	11,250	10,653	21,903	100.00

(a) Persons described as being of *Aboriginal origin*.

(b) See letterpress on page 128.

In the next table, details are given of the age distribution of the Aboriginal population as revealed at the 1971 Census.

**ABORIGINAL POPULATION (a)—AGE DISTRIBUTION
WESTERN AUSTRALIA AND AUSTRALIA: CENSUS, 30 JUNE 1971**

Age last birthday (years)	Western Australia				Australia			
	Males	Females	Persons		Males	Females	Persons	
			Number	Per cent of total			Number	Per cent of total
0-4	1,971	1,832	3,803	17·36	9,488	9,295	18,783	17·67
5-9	1,682	1,675	3,357	15·33	8,293	8,107	16,400	15·43
10-14	1,487	1,463	2,950	13·47	7,195	6,964	14,159	13·32
15-19	1,089	1,045	2,134	9·74	5,365	5,373	10,738	10·10
20-24	851	865	1,716	7·83	4,555	4,489	9,044	8·51
25-29	704	639	1,343	6·13	3,597	3,379	6,976	6·56
30-34	610	576	1,186	5·41	2,886	2,934	5,820	5·48
35-39	552	498	1,050	4·79	2,614	2,617	5,231	4·92
40-44	511	455	966	4·41	2,313	2,258	4,571	4·30
45-49	364	355	719	3·28	1,931	1,765	3,696	3·48
50-54	335	293	628	2·87	1,583	1,470	3,053	2·87
55-59	272	212	484	2·21	1,148	1,024	2,172	2·04
60-64	231	273	504	2·30	902	1,004	1,906	1·79
65-69	244	175	419	1·91	881	673	1,554	1·46
70-74	186	168	354	1·62	628	544	1,172	1·10
75 and over	161	129	290	1·32	540	475	1,015	0·95
Total	11,250	10,653	21,903	100·00	53,919	52,371	106,290	100·00
Under 21	10,659	10,181	12,655	57·78	51,870	50,679	62,099	58·42
21-64			8,185	37·37			40,450	38·06
65 and over	591	472	1,063	4·85	2,049	1,692	3,741	3·52
Total	11,250	10,653	21,903	100·00	53,919	52,371	106,290	100·00

(a) Persons described as being of *Aboriginal origin*.

ESTIMATES OF POPULATION

For dates other than those of the periodic census of population, estimates are based on records of births and deaths and of movements of population interstate and overseas. Estimates of the population of Australia and of each of the States and Territories are prepared by the Commonwealth Statistician as at 31 March, 30 June, 30 September and 31 December in each year. Because the available records of interstate movement are incomplete, these intercensal estimates as they apply to States and Territories are approximate and are revised when the results of the next succeeding census become known.

Mean Population

It is often useful to relate a given characteristic to population in order to express it in *per capita* terms or as 'per head of population'. In some cases it is appropriate to relate a characteristic to the population as at a specified date as, for example, savings bank balances per head of population at 30 June, or motor vehicles per head of population at 31 December.

Where events, as for instance births or deaths, are taking place continuously throughout a period, it is obviously not appropriate to relate these events to the population as at a specific date. It is necessary, therefore, to devise a measure which takes account of the change in population which occurs continuously throughout any period. This measure is known as the *mean population*.

As stated earlier, estimates of population are prepared as at the end of each quarter of the year. The mean population of a quarter might be taken to be the average, or

arithmetic mean, of the populations at the beginning and the end of the quarter. If a represents the population at the beginning of a year and b, c, d and e the populations at the end of the first, second, third and fourth quarters respectively, these quarterly means would then be $\frac{1}{2}(a + b)$ for the first quarter, $\frac{1}{2}(b + c)$ for the second, $\frac{1}{2}(c + d)$ for the third and $\frac{1}{2}(d + e)$ for the fourth quarter. The mean population for the year might then be taken as the arithmetic mean of the four quarterly average populations, or

$$\frac{1}{4}\{\frac{1}{2}(a + b) + \frac{1}{2}(b + c) + \frac{1}{2}(c + d) + \frac{1}{2}(d + e)\}$$

which may be more simply expressed as $\frac{1}{12}(a + 4b + 2c + 2d + e)$. This method of deriving mean population had been in use in Western Australia prior to its general adoption by the 1903 Conference of Australian Statisticians. It was later superseded by the more precise measure

$$\frac{1}{12}(a + 4b + 2c + 4d + e)$$

which is now commonly used in Australian statistics. In order to establish uniformity with current practice, estimates of mean population for 1901 and later years were revised, where necessary, by the application of this formula.

The estimated mean population of Western Australia is shown in the next table for each financial and calendar year in the period from 1 January 1967 to 30 June 1973.

Population Estimates

As a result of the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution, to which reference is made on page 121, current population estimates no longer exclude full-blood Aborigines. Estimates for earlier dates and periods back to the Census of 30 June 1961 have also been prepared on the basis of *total* population (*i.e.* including Aborigines). The final results of the 1966 Census, inclusive of all persons enumerated, were taken into account in the preparation of these estimates.

The following table shows estimates of the population of Western Australia and the elements of population increase during the period from 1 January 1968 to 30 June 1973. Figures for dates and periods subsequent to 30 June 1971 are subject to revision in accordance with the results of the next Census.

POPULATION ESTIMATES

Year	Population at end of year			Increase during year			Mean population		
	Males	Females	Persons	Natural increase (a)	Estimated net migration (b)	Total increase	Males	Females	Persons
YEAR ENDED 30 JUNE									
1969	489,237	465,609	954,846	12,712	27,092	39,804	479,169	456,816	935,985
1970	508,612	482,742	991,354	13,683	22,825	36,508	499,755	475,308	975,063
1971	(c)529,066	(c)501,403	(c)1,030,469	15,476	23,639	39,115	520,000	493,455	1,013,455
1972	539,595	513,587	1,053,182	15,634	7,079	22,713	536,769	509,858	1,046,627
1973	547,041	521,428	1,068,469	13,528	1,759	15,287	544,573	519,634	1,064,207
YEAR ENDED 31 DECEMBER									
1968	479,938	457,862	937,800	12,073	28,739	40,812	468,522	447,235	915,757
1969	500,378	476,242	976,620	13,404	25,416	38,820	489,531	466,129	955,660
1970	520,174	493,878	1,014,052	14,075	23,357	37,432	509,875	484,326	994,201
1971	537,781	511,116	1,048,897	16,433	18,412	34,845	529,371	502,243	1,031,614
1972	544,918	520,845	1,065,763	14,736	2,130	16,866	541,158	515,350	1,056,508

(a) Excess of births registered over deaths registered.

(b) Interstate and overseas.

(c) Census figures.

The following table shows the estimated population of each State and Territory of Australia at 31 December of the years 1968 to 1972. The estimates refer to *total* population (see letterpress preceding previous table).

POPULATION ESTIMATES—STATES AND TERRITORIES
(^{'000})

State or Territory	Estimated population at 31 December—				
	1968	1969	1970	1971	1972
New South Wales	4,401.2	4,490.8	4,573.7	4,651.5	4,697.2
Victoria	3,356.8	3,421.2	3,482.0	3,537.5	3,581.0
Queensland	1,747.7	1,779.7	1,812.8	1,852.3	1,898.6
South Australia	1,132.1	1,149.4	1,170.2	1,185.5	1,196.5
Western Australia	937.8	976.6	1,014.1	1,048.9	1,065.8
Tasmania	383.1	387.0	390.3	392.8	395.6
Northern Territory	70.2	75.8	82.8	88.9	93.4
Australian Capital Territory	116.6	126.8	137.6	150.8	163.2
AUSTRALIA	12,145.6	12,407.2	12,663.5	12,908.2	13,091.3

The following table shows the estimated population of Western Australia at ten-yearly intervals from 1830 to 1970, and annually from 1968 to 1972. The estimates for 1960 and earlier exclude full-blood Aborigines. The figures shown for 1968 and later refer to *total* population, i.e. including Aborigines; see letterpress *Population Estimates* on previous page.

ESTIMATED POPULATION (a)—1830-1972

At 31 December—	Males	Females	Persons	Increase (b)		
				Number	Per cent	Average annual rate (per cent)
1830	877	295	1,172	....	....	....
1840	1,434	877	2,311	1,139	97.18	7.03
1850	3,576	2,310	5,886	3,575	154.69	9.80
1860	9,597	5,749	15,346	9,460	160.72	10.06
1870	15,511	9,624	25,135	9,789	63.79	5.06
1880	16,985	12,576	29,561	4,426	17.61	1.64
1890	28,854	19,648	48,502	18,941	64.07	5.08
1900	110,088	69,879	179,967	131,465	271.05	14.01
1910	157,971	118,861	276,832	96,865	53.82	4.40
1920	176,895	154,428	331,323	54,491	19.68	1.81
1930	232,868	198,742	431,610	100,287	30.27	2.68
1940	248,734	225,342	474,076	42,466	9.84	0.94
1950	294,758	277,891	572,649	98,573	20.79	1.91
1960	372,665	358,368	731,033	158,384	27.66	2.47
1970 (a)	520,174	493,878	1,014,052	283,019	38.71	3.33
1968	479,938	457,862	937,800	40,812	4.55	....
1969	500,378	476,242	976,620	38,820	4.14	....
1970	520,174	493,878	1,014,052	37,432	3.83	....
1971	537,781	511,116	1,048,897	34,845	3.44	....
1972	544,918	520,845	1,065,763	16,866	1.61	....
Five years ended 31 December 1972				168,775	18.82	3.51

(a) Estimates for 1960 and earlier exclude full-blood Aborigines; those shown for 1968 and later refer to *total* population, i.e. including Aborigines. (b) Decennial increases during the period 1830-1970; annual increases from 1968 to 1972.

Local Government Areas

Details of the population of local government areas in Western Australia at the Census of 30 June 1971 and estimates as at 30 June 1972 and 1973 appear in the *Appendix*.

Chapter IV—continued

Part 2—Births, Deaths and Marriages

NOTE. Reference is made on page 121 to the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution. As a consequence of this repeal, all vital statistics, which previously excluded births, deaths and marriages of full-blood Aborigines, now include events among the total population. Statistics for 1966 and later years have been compiled on this basis.

A line drawn across a column in a table between two consecutive figures, indicates a break in continuity in the series. Figures above the line exclude full-blood Aborigines; those below the line refer to events among the total population, i.e. including Aborigines.

THE REGISTRATION SYSTEM

Compulsory registration of births, deaths and marriages in Western Australia was originally provided for by legislation of the year 1841. The Statutes currently in force are the *Registration of Births, Deaths and Marriages Act, 1961-1965* (State) and the *Marriage Act 1961-1973* (Commonwealth). For administrative purposes, the State is divided into twenty-seven Registry Districts, each having a District Registrar. Particulars of births, deaths and marriages reported to the District Registrars are sent to the Registrar-General at Perth, where a central registry office has been maintained since 1841. Local registers are kept at each district office.

Births are required to be registered within sixty days of the event, and must be notified by the father, the mother or the occupier of the premises where the birth took place. Special provisions and penalties apply to notification and registration after the expiration of the sixty-day period.

A stillbirth is required to be registered both as a birth and a death. From 1 January 1968 the term 'stillbirth', for registration purposes, refers to a child of at least twenty weeks' gestation not born alive. Previously it was restricted to cases where the gestation period was at least twenty-eight weeks.

Deaths are required to be registered within fourteen days. Notification must be given by the person who disposes of the body or by the occupier of the premises where the death occurred. As in the case of births, special provisions and penalties exist for the late registration of a death.

Marriages are celebrated according to the provisions of the *Marriage Act 1961-1973* (Commonwealth) by ministers of religion registered under the Act, or by District Registrars. Ministers are required to lodge a marriage certificate with the District Registrar for registration within fourteen days of the celebration of a marriage. A penalty fee is provided for registrations after fourteen days from the date of marriage.

Statistics of births, deaths and marriages are prepared from the registration documents.

The following table shows, for the years 1968 to 1972, the number of births and deaths registered in Western Australia, classified according to Statistical Divisions. The figures do not necessarily represent the number of such events which actually occurred in a particular Statistical Division during each year, since births are allocated to the usual place of residence of the mother and deaths to the usual place of residence of the deceased. Further, the statistics are compiled according to date of registration and not date of occurrence.

**BIRTHS AND DEATHS—NUMBERS REGISTERED (a)
STATISTICAL DIVISIONS (b)**

Statistical Division (b)	Births (c)					Deaths (d)				
	1968	1969	1970	1971	1972	1968	1969	1970	1971	1972
Perth Statistical Division	12,018	13,094	13,908	15,843	14,400	5,264	5,185	5,345	5,591	5,318
Other Divisions—										
South-West	1,580	1,522	1,603	1,742	1,534	571	564	630	627	618
Southern Agricultural	1,161	1,161	1,128	1,183	965	366	339	359	324	307
Central Agricultural	1,470	1,494	1,300	1,348	1,216	336	335	347	353	339
Northern Agricultural	1,167	1,192	1,135	1,175	1,068	254	229	245	241	232
Eastern Goldfields	1,014	1,085	1,170	1,249	1,181	344	319	334	348	320
Central	163	158	164	133	131	53	59	46	55	37
North-West and Pilbara	556	648	758	1,056	1,173	137	139	100	137	121
Kimberley	412	400	452	500	509	143	181	137	130	149
Total	7,523	7,660	7,710	8,396	7,777	2,204	2,165	2,198	2,215	2,123
WESTERN AUSTRALIA	19,541	20,754	21,618	24,239	22,177	7,468	7,350	7,543	7,806	7,441

(a) See NOTE on previous page. (b) For component local government areas, see maps immediately preceding Index.
(c) Live births. (d) Stillbirths are not included; see next table.

BIRTHS

Statistics of births in each of the five years 1968 to 1972 in the Perth Statistical Division, the rest of the State, and in Western Australia as a whole are shown in the following table. Further details of stillbirths appear on page 152.

BIRTHS REGISTERED (a)

Year	Live births					Stillbirths (d)
	Males (b)	Females (b)	Persons (b)	Ex-nuptial births (c)	Multiple births (c)	

PERTH STATISTICAL DIVISION

1968	6,190	5,828	12,018	990	(e) 235	155
1969	6,697	6,397	13,094	1,159	253	165
1970	7,124	6,784	13,908	1,252	278	184
1971	8,075	7,768	15,843	1,530	239	194
1972	7,259	7,141	14,400	1,424	271	173

OTHER DIVISIONS

1968	3,880	3,643	7,523	1,024	(e) 169	88
1969	3,898	3,762	7,660	1,072	(e) 152	85
1970	4,048	3,662	7,710	1,064	(e) 132	111
1971	4,423	3,973	8,396	1,190	(f) 173	104
1972	4,078	3,699	7,777	1,208	(e) 143	85

WESTERN AUSTRALIA

1968	10,070	9,471	19,541	2,014	(f) 404	243
1969	10,595	10,159	20,754	2,231	(e) 405	250
1970	11,172	10,446	21,618	2,316	(e) 410	295
1971	12,498	11,741	24,239	2,720	(f) 412	298
1972	11,337	10,840	22,177	2,632	(e) 414	258

(a) See NOTE on previous page. (b) Includes ex-nuptial births and multiple births. (c) Figures represent the number of children live-born. (d) Figures refer to stillbirths where the child was of at least 20 weeks' gestation. (e) Includes one case of triplets. (f) Includes two cases of triplets.

The following table shows the number of nuptial confinements during 1972, classified according to age group of mother and number of previous issue.

NUPTIAL CONFINEMENTS—AGE OF MOTHER AND PREVIOUS ISSUE, 1972 (a)

Previous issue (number)	Age of mother (years)							Total married mothers	
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over	Number	Per cent
0	1,355	3,636	1,865	412	127	20	3	7,418	38.32
1	289	2,734	2,366	621	118	31	2	6,161	31.82
2	20	704	1,585	791	167	38	1	3,306	17.08
3	2	151	530	546	203	40	1	1,473	7.61
4		31	150	221	117	29	2	550	2.84
5		5	36	91	58	19	2	211	1.09
6		1	13	31	39	18	1	103	0.53
7			8	20	24	9	1	62	0.32
8			2	11	17	7		37	0.19
9				1	7	3	2	13	0.07
10 or more					16	7	2	25	0.13
Total married mothers	1,666	7,262	6,555	2,745	893	221	17	19,359	100.00

(a) See NOTE on page 140. Figures represent cases in which at least one child was live-born.

The following table shows the number of nuptial confinements during 1972, classified according to the relative ages of parents.

NUPTIAL CONFINEMENTS—RELATIVE AGES OF PARENTS, 1972 (a)

Age of father (years)	Age of mother (years)							Total fathers	
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over	Number	Per cent
Under 20	313	37	1					351	1.81
20-24	1,108	2,990	284	18	1			4,401	22.73
25-29	210	3,489	3,451	273	28	1		7,452	38.49
30-34	29	621	2,212	1,354	114	5	1	4,336	22.40
35-39	4	98	465	772	373	27		1,739	8.98
40-44	2	20	104	253	266	114	3	762	3.94
45-49		5	28	58	95	52	8	246	1.27
50 and over		2	10	17	16	22	5	72	0.37
Not stated									
Total married mothers—									
Number	1,666	7,262	6,555	2,745	893	221	17	19,359	
Per cent	8.61	37.51	33.86	14.18	4.61	1.14	0.09		100.00

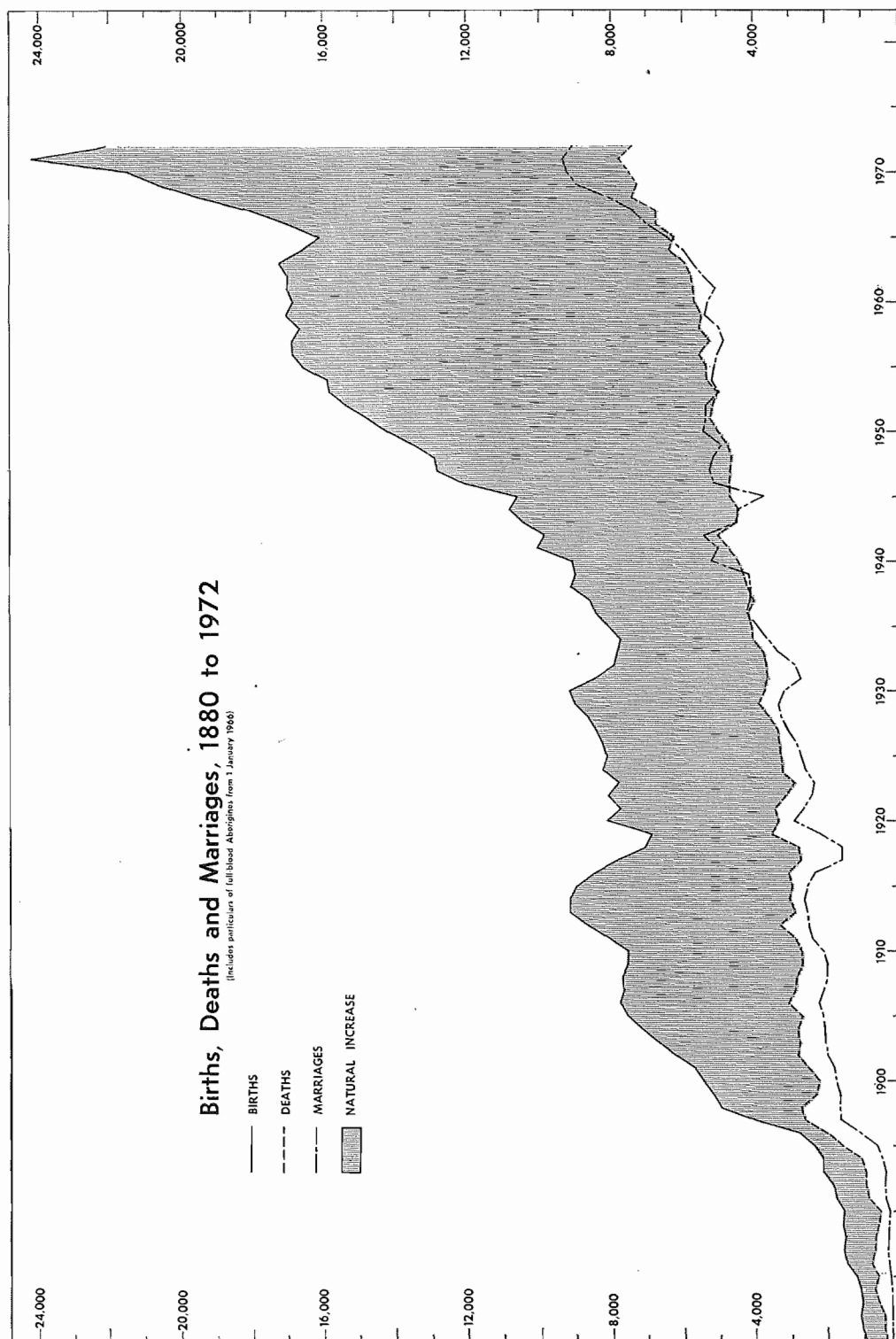
(a) See NOTE on page 140. Figures represent cases in which at least one child was live-born.

The ages of mothers of ex-nuptial children born during each of the years 1968 to 1972 are shown in the following table.

EX-NUPTIAL BIRTHS—AGE OF MOTHER (a)

Age of mother (years)		1968	1969	1970	1971	1972
Under 14		5	4	7	6	
14		15	11	15	19	15
15		49	34	55	69	79
16		103	123	128	166	155
17		173	197	200	257	257
18		197	217	227	287	276
19		215	192	241	251	273
20		144	205	215	240	218
21-24		446	552	550	639	587
25-29		319	313	311	397	414
30-34		178	207	211	245	203
35-39		115	115	108	94	114
40-44		45	41	39	40	31
45 and over		3	8	5	9	3
Not stated		7	12	4	1	7
Total, ex-nuptial births		2,014	2,231	2,316	2,720	2,632

(a) See NOTE on page 140.



Crude Birth Rates. The crude birth rate in any period may be defined as the number of live births occurring during the period for every thousand of the mean population.

The average annual rates for each five-year period in the fifty years from 1921 to 1970 and the rates for single years from 1963 to 1972, for Western Australia and Australia as a whole, are shown in the following table.

CRUDE BIRTH RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	22.85	23.86	1963	22.23	21.61
1926-30	21.54	20.98	1964	20.93	20.60
1931-35	18.36	16.94	1965	19.85	19.65
1936-40	19.16	17.52	1966	20.25	19.28
1941-45	21.72	20.28		20.48	19.42
1946-50	25.24	23.39	1967	21.34	20.04
1951-55	25.37	22.86	1968	21.72	20.38
1956-60	24.20	22.59	1969	21.74	20.55
1961-65	21.71	21.34	1970	23.50	21.62
1966-70	21.14	19.95	1971	20.99	20.39
			1972		

(a) See NOTE on page 140. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census.

In each year of the period under review, Western Australia's crude birth rate has been higher than that of Australia with the exception of the early 1920s.

In Western Australia, the rate showed a marked and almost continuous decrease from the beginning of the century to the depression of thirty years later when the unprecedentedly low rate of 17.64 was recorded in 1934 (see Graph—*Rates of Birth, Death and Marriage*). In the following years a fairly consistent increase was evident until 1952 when the rate reached 25.66, its highest level since 1917. The rate then declined and in 1965 was 19.85, the lowest since 1940. It increased in each succeeding year until 1971 when the rate was 23.50, the highest recorded since 1959. In 1972 it fell to 20.99.

Age-specific Birth Rates. As a measure of fertility, the crude birth rate has the advantage of simplicity in calculation. The data necessary for its computation are usually readily available from published statistics, and it is therefore useful in comparing the fertility of the populations of States and countries for which no additional data are available. However, it is of limited use, since it does not take into account the important factors of age and sex composition of the population. Age-specific birth rates, which do have regard to these factors, therefore provide a better measure of fertility. Age-specific birth rates represent the number of births to women of specified ages per thousand women of those particular ages, and thus take cognisance of the variations in fertility experienced by women at the successive stages of their child-bearing life.

AGE-SPECIFIC BIRTH RATES (a)—WESTERN AUSTRALIA

Year	Age group (years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1947	32.63	187.14	206.24	146.72	84.97	28.63	2.06
1954	42.74	231.09	217.77	135.74	71.71	23.61	1.52
1961	47.07	246.94	231.92	127.38	61.82	20.55	1.17
1966	53.81	203.08	197.12	102.12	45.68	13.27	1.38
1971	63.33	204.90	203.58	101.91	41.96	9.89	0.73

(a) Number of live births registered per 1,000 women in each age group. Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 140).

For purposes of comparison with Western Australian experience, age-specific birth rates for Australia as a whole are given in the following table.

AGE-SPECIFIC BIRTH RATES (a)—AUSTRALIA

Year	Age group (years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1947	32.06	166.18	186.60	129.99	75.02	23.52	1.81
1954	39.19	197.13	194.02	121.76	64.43	20.16	1.47
1961	47.35	225.81	221.21	131.11	63.38	19.17	1.41
1966	49.26	172.81	183.29	105.28	50.60	14.28	1.09
1971	55.17	180.92	195.39	102.26	44.90	11.42	0.78

(a) Number of live births registered per 1,000 women in each age group. Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 140).

Gross and Net Reproduction Rates. The gross reproduction rate is derived from fertility rates representing the number of *female* births to women of specified ages per thousand women of those particular ages. It provides a measure of the number of female children who would be born, on the average, to every woman assuming that she lives through the whole of the child-bearing period and that the basic fertility rates remain unaltered throughout.

The gross reproduction rate assumes that all females survive to the end of their child-bearing capacity. A more accurate measure, which takes into account the effect of mortality among women during this period is the net reproduction rate. This rate represents the average number of female children who would be born to women during their lifetime if they were subject in each succeeding year of life to the fertility and mortality rates on which the calculation is based. The net reproduction rate is a measure of the number of women who, in the next generation, will replace the women of reproductive age in the current generation. It provides a useful indication of likely future population trends. A rate remaining stationary at unity indicates an ultimately static population. If a rate greater than unity is maintained, an ultimate increase of population will result, while a continuing rate less than unity will lead to an ultimate decline.

GROSS AND NET REPRODUCTION RATES (a) WESTERN AUSTRALIA AND AUSTRALIA

Year	Gross reproduction rate		Net reproduction rate	
	Western Australia	Australia	Western Australia	Australia
1947	1.683	1.494	(b) 1.595	(b) 1.416
1954	1.772	1.559	(c) 1.704	(c) 1.499
1961	1.785	1.728	(d) 1.730	(d) 1.672
1966	1.486	1.401	(e) 1.441	(e) 1.357
1971	1.516	1.441	(e) 1.470	(e) 1.397

(a) Rates are based on census results and exclude particulars of full-blood Aborigines prior to 1966 (see NOTE on page 140). (b) Based on 1946-48 mortality experience. (c) Based on 1953-55 mortality experience. (d) Based on 1960-62 mortality experience. (e) Based on 1965-67 mortality experience.

DEATHS

Statistics of deaths in each of the five years 1968 to 1972 in the Perth Statistical Division, the rest of the State, and in Western Australia as a whole appear in the following table.

BIRTHS, DEATHS AND MARRIAGES

DEATHS REGISTERED (a)

Year	Deaths (b)			Infant deaths (c)		
	Males	Females	Persons	Males	Females	Persons

PERTH STATISTICAL DIVISION

1968	2,941	2,323	5,264	115	91	206
1969	2,936	2,249	5,185	133	107	240
1970	3,006	2,339	5,345	140	111	251
1971	3,151	2,440	5,591	154	115	269
1972	2,951	2,367	5,318	109	79	188

OTHER DIVISIONS

1968	1,397	807	2,204	121	71	192
1969	1,377	788	2,165	117	96	213
1970	1,386	812	2,198	109	99	208
1971	1,385	830	2,215	111	84	195
1972	1,366	757	2,123	98	62	160

WESTERN AUSTRALIA

1968	4,338	3,130	7,468	236	162	398
1969	4,313	3,037	7,350	250	203	453
1970	4,392	3,151	7,543	249	210	459
1971	4,536	3,270	7,806	265	199	464
1972	4,317	3,124	7,441	207	141	348

(a) See NOTE on page 140. (b) Including infant deaths. (c) Deaths occurring in the first year of life.

Crude Death Rates. The crude death rate is perhaps the most common measure of mortality, and is derived by relating the deaths occurring in a period to the mean population for that period. It is usually expressed as number of deaths per thousand of mean population.

The rates for Western Australia and for Australia in the period 1921 to 1972 are compared in the following table.

CRUDE DEATH RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	9.17	9.52	1963	7.68	8.70
1926-30	8.91	9.26	1964	8.06	9.04
1931-35	8.83	9.00	1965	7.70	8.79
1936-40 (c)	9.22	9.63			
1941-45 (c)	9.86	9.96	1966	8.13	9.01
			1967	7.71	8.70
1946-50 (c)	9.23	9.74			
1951-55	8.49	9.25	1968	8.16	9.11
1956-60	7.90	8.78	1969	7.69	8.68
1961-65	7.78	8.75	1970	7.59	9.02
			1971	7.57	8.66
1966-70	7.84	8.90	1972	7.04	8.45

(a) See NOTE on page 140. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census. (c) Excludes deaths of members of defence forces from September 1939 to June 1967.

In the early years of the century, the Western Australian rate was higher than that for Australia as a whole, but fell below the Australian average in 1909. Since that time, the rate for Western Australia has, with very few exceptions, remained lower than that for Australia.

Western Australia's crude death rate for the year 1902 was 13·79 per thousand of the mean population but by 1931 it had fallen to 8·51 (see Graph—*Rates of Birth, Death and Marriage*). After that year, the rate increased until it reached 10·65 in 1942. Since then there was a general decline until 1963 when the rate was 7·68. The rate for 1972 was 7·04 per thousand of mean population, the lowest ever recorded in Western Australia.

Standardised Death Rates. The crude death rate expresses simply the number of deaths occurring in a population during any period as a proportion of the mean population for that period. Although this rate is useful as a measure of the absolute level of mortality, its value is necessarily restricted when comparing the mortality in different communities in the same period, or in one community at different times.

The effect on the crude death rate of the presence in a community of a high proportion of young people or of aged people, or of a high or low masculinity, will be readily appreciated. To devise an adequate measure of comparative mortality, it is therefore necessary to select a 'standard' population to which the varying mortality experiences may be referred. A standard population compiled by the International Statistical Institute, based upon the age and sex distribution of the population of nineteen European countries at their censuses nearest to the year 1900, has been used as the basis of the standardised death rates for Western Australia and Australia given in the next paragraph. The rate is computed by applying to each sex and age group in the standard population, the death rates actually recorded in the corresponding groups of the State and Australian populations. The sum of these results represents the number of deaths which would have occurred in the standard population if it had been exposed to the same risks of mortality. The standardised death rate is derived by expressing this number in terms of 'per thousand of the standard population'.

For the Census years 1921, 1933, 1947, 1954, 1961 and 1966 the standardised death rates for Western Australia were 11·88, 8·74, 7·28, 6·71, 6·02 and 6·25, and the corresponding rates for Australia as a whole were 10·58, 8·62, 7·34, 6·90, 6·27 and 6·53. These rates have been compiled on a basis which excludes full-blood Aborigines; see *NOTE* on page 140. The rates for 1971, calculated on the basis of total population (*i.e.* including Aborigines), were 6·16 for Western Australia and 6·32 for Australia.

Causes of Death. Statistics of causes of death provide important numerical facts by which to evaluate the varying health conditions and needs of different countries. In order to enable valid international comparisons, it is necessary that each country present its statistics of causes of death in a uniform manner. The first classification of causes of death to be adopted internationally was that compiled by Dr J. Bertillon at the request of the International Statistical Institute meeting in Vienna in 1891. Subsequently this classification was periodically revised by the Institute in collaboration with the League of Nations Health Organization. More recently, revisions have been carried out by a Committee of the World Health Organization.

PRINCIPAL CAUSES OF DEATH, 1972 (a)

International number	Cause of death (b) (c)	Males	Females	Persons	Per cent of all deaths	Rate (d)
000-136	Infective and parasitic diseases—					
010-012	Tuberculosis of respiratory system	5	3	8	0·1	0·8
	Other infective and parasitic diseases	35	40	75	1·0	7·1
140-239	Neoplasms					
140-199	Malignant—					
150-159	Digestive organs and peritoneum	241	173	414	5·6	39·2
162	Trachea, bronchus and lung	248	39	287	3·9	27·2
174	Breast	1	97	98	1·3	9·3
180-189	Genito-urinary organs	123	101	224	3·0	21·2
	Other	126	105	231	3·1	21·9
200-209	Lymphatic and haematopoietic tissue—					
204-207	Leukaemia and aleukaemia	36	24	60	0·8	5·7
	Other	35	25	60	0·8	5·7
210-239	Benign and unspecified	10	3	13	0·2	1·2
240-279	Endocrine, nutritional and metabolic diseases—					
250	Diabetes mellitus	54	65	119	1·6	11·3
	Other	22	26	48	0·6	4·5
280-289	Diseases of blood and blood-forming organs	9	7	16	0·2	1·5
290-315	Mental disorders	41	47	88	1·2	8·3

PRINCIPAL CAUSES OF DEATH, 1972 (a)—continued

International number	Cause of death (b) (c)	Males	Females	Persons	Per cent of all deaths	Rate (d)
320-389	Diseases of the nervous system and sense organs	48	32	80	1.1	7.6
390-458	Diseases of the circulatory system—					
393-398	Rheumatic heart disease	26	49	75	1.0	7.1
410-414	Ischaemic heart disease	1,290	820	2,110	28.4	199.7
430-438	Cerebrovascular disease	375	542	917	12.3	86.8
	Other	311	309	620	8.3	58.7
460-519	Diseases of the respiratory system—					
480-486	Pneumonia	96	61	157	2.1	14.9
490-493	Bronchitis, emphysema and asthma	215	50	265	3.6	25.1
	Other	60	33	93	1.2	8.8
520-577	Diseases of the digestive system	89	61	150	2.0	14.2
580-629	Diseases of the genito-urinary system	77	63	140	1.9	13.3
630-678	Complications of pregnancy, childbirth and the puerperium		3	3		0.3
680-709	Diseases of the skin and subcutaneous tissue	4	4	8	0.1	0.8
710-738	Diseases of the musculoskeletal system and connective tissue	15	19	34	0.5	3.2
740-759	Congenital anomalies	52	50	102	1.4	9.7
760-779	Certain causes of perinatal morbidity and mortality	111	64	175	2.4	16.6
780-796	Ill-defined conditions	44	21	65	0.9	6.2
800-999	Accidents, poisonings and violence—					
810-823	Motor vehicle accidents	241	82	323	4.3	30.6
850-877	Accidental poisonings	10	5	15	0.2	1.4
880-887	Accidental falls	36	33	69	0.9	6.5
950-959	Suicide and self-inflicted injury	99	31	130	1.7	12.3
	Other	132	37	169	2.3	16.0
	All causes	4,317	3,124	7,441	100.0	704.3

(a) See NOTE on page 140. (b) Classified in accordance with the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision), operative from 1 January 1968. (c) Defined, in part, as the disease or injury which initiated the train of morbid events leading directly to death. (d) Per 100,000 of mean population.

The figures in the previous table have been compiled on the basis of the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision, 1965), operative from 1 January 1968. The term 'cause of death', as used in this table and elsewhere in this Part, means ' (a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury '.

The principal causes of death in age groups and the number and proportion (per cent) of total deaths from specified causes are shown in the following table.

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1972 (a)

International number	Age group and cause of death (b)	Deaths from specified cause			
		In age group (c)		At all ages	
		Number	Per cent	Number	Per cent (d)
	Under 1 year	348	100.0	....	....
000-136	Infective and parasitic diseases	26	7.5	83	31.3
480-486	Pneumonia	44	12.6	157	28.0
740-759	Congenital anomalies	62	17.8	102	60.8
760-769	Maternal causes, including difficult labour	84	24.1	85	98.8
770	Conditions of placenta	23	6.6	23	100.0
776	Anoxic and hypoxic conditions n.e.c.	37	10.6	37	100.0
	Other causes	72	20.7	....	....
	1-4 years	88	100.0	....	....
000-136	Infective and parasitic diseases	7	8.0	83	8.4
140-209	Malignant neoplasms (e)	5	5.7	1,374	0.4
480-486	Pneumonia	5	5.7	157	3.2
740-759	Congenital anomalies	13	14.8	102	12.7
800-949	Accidents	41	46.6	558	7.3
	Other causes	17	19.3	....	....
	5-14 years	74	100.0	....	....
140-209	Malignant neoplasms (e)	14	18.9	1,374	1.0
480-486	Pneumonia ....	....	....	157	....
740-759	Congenital anomalies	7	9.5	102	6.9
800-949	Accidents	36	48.6	558	6.5
	Other causes	17	23.0	....	....

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1972 (a)—continued

International number	Age group and cause of death (b)	Deaths from specified cause			
		In age group (c)		At all ages	
		Number	Per cent	Number	Per cent (d)
	15-19 years	97	100.0	....	....
140-209	Malignant neoplasms (e)	6	6.2	1,374	0.4
740-759	Congenital anomalies ....	....	....	102	....
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	60	61.9	323	18.6
950-959	Suicide	4	4.1	130	3.1
	Other	11	11.3	253	4.3
	Other causes	16	16.5	....	....
	20-24 years	108	100.0	....	....
140-209	Malignant neoplasms (e)	6	5.6	1,374	0.4
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	58	53.7	323	18.0
950-959	Suicide	13	12.0	130	10.0
	Other	14	13.0	253	5.5
	Other causes	17	15.7	....	....
	25-34 years	164	100.0	....	....
140-209	Malignant neoplasms (e)	15	9.1	1,374	1.1
390-458	Diseases of circulatory system	15	9.1	3,722	0.4
740-759	Congenital anomalies	5	3.0	102	4.9
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	49	29.9	323	15.2
950-959	Suicide	20	12.2	130	15.4
	Other	32	19.5	253	12.6
	Other causes	28	17.1	....	....
	35-44 years	249	100.0	....	....
140-209	Malignant neoplasms (e)	63	25.3	1,374	4.6
393-398, 402 } 404, 410-429 }	Heart diseases	45	18.1	2,520	1.8
430-438	Cerebrovascular diseases	13	5.2	917	1.4
460-519	Diseases of respiratory system	15	6.0	515	2.9
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	23	9.2	323	7.1
950-959	Suicide	33	13.3	130	25.4
	Other	18	7.2	253	7.1
	Other causes	39	15.7	....	....
	45-54 years	549	100.0	....	....
140-209	Malignant neoplasms (e)	165	30.1	1,374	12.0
393-398, 402 } 404, 410-429 }	Heart diseases	153	27.9	2,520	6.1
430-438	Cerebrovascular diseases	44	8.0	917	4.8
460-519	Diseases of respiratory system	19	3.5	515	3.7
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	36	6.6	323	11.1
950-959	Suicide	22	4.0	130	16.9
	Other	23	4.2	253	9.1
	Other causes	87	15.8	....	....
	55-64 years	1,162	100.0	....	....
140-209	Malignant neoplasms (e)	326	28.1	1,374	23.7
393-398, 402 } 404, 410-429 }	Heart diseases	448	38.6	2,520	17.8
430-438	Cerebrovascular diseases	91	7.8	917	9.9
460-519	Diseases of respiratory system	54	4.6	515	10.5
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	23	2.0	323	7.1
	Other	57	4.9	383	14.9
	Other causes	163	14.0	....	....
	65-74 years	1,865	100.0	....	....
140-209	Malignant neoplasms (e)	418	22.4	1,374	30.4
250	Diabetes	38	2.0	119	31.9
393-398, 402 } 404, 410-429 }	Heart diseases	778	41.7	2,520	30.9
430-438	Cerebrovascular diseases	241	12.9	917	26.3
460-519	Diseases of respiratory system	154	8.3	515	29.9
800-999	Accidents, poisonings, violence—	....	....	....	....
810-823	Motor vehicle accidents	17	0.9	323	5.3
	Other	28	1.5	383	7.3
	Other causes	191	10.2	....	....

PRINCIPAL CAUSES OF DEATH—AGE GROUPS, 1972 (a)—continued

International number	Age group and cause of death (b)	Deaths from specified cause			
		In age group (c)		At all ages	
		Number	Per cent	Number	Per cent (d)
	75 years and over	2,735	100.0	....	....
140-209	Malignant neoplasms (e)	354	12.9	1,374	25.8
393-398, 402 } 404, 410-429 }	Heart diseases	1,082	39.5	2,520	42.9
430-438	Cerebrovascular diseases	519	19.0	917	56.6
440-448	Diseases of arteries, arterioles and capillaries	165	6.0	228	72.4
460-519	Diseases of respiratory system	200	7.3	515	38.8
800-999	Accidents, poisonings, violence—				
880-887	Accidental falls	38	1.4	69	55.1
	Other	36	1.3	637	5.8
	Other causes	341	12.5	....	....

n.e.c. denotes 'not elsewhere classified'.

(a) See NOTE on page 140. (b) Classified in accordance with the *International Statistical Classification of Diseases, Injuries and Causes of Death* (Eighth Revision), operative from 1 January 1968. (c) Excludes two deaths (one classified to Accidents, poisonings, violence and one ill-defined cause) for which ages were not stated. (d) Deaths in the specified age group as a percentage of total deaths for a particular cause. (e) Including neoplasms of lymphatic and haematopoietic tissue.

Infant Deaths. The term 'infant death' refers to a death which occurs before the completion of the first year of life. In the following table, infant deaths registered in Western Australia during each of the five years to 1972 are classified according to age at death.

INFANT MORTALITY (a)—AGES AT DEATH

Year	Days					Total under 28 days	Months			Total under 1 year		
	Under 1	1-6	7-13	14-20	21-27		Under 3	3-5	6-11			
MALES												
1968	110	51	8	....	4	173	199	12	25	236
1969	93	68	10	8	3	182	201	17	32	250
1970	91	62	18	5	3	179	208	19	22	249
1971	103	57	8	5	1	174	203	28	34	265
1972	90	38	5	3	3	139	163	22	22	207
FEMALES												
1968	67	35	5	5	5	117	130	19	13	162
1969	76	56	3	4	1	140	152	29	22	203
1970	80	39	9	3	5	136	158	18	34	210
1971	80	31	14	4	2	131	145	29	25	199
1972	46	32	4	5	5	92	108	21	12	141
PERSONS												
1968	177	86	13	5	9	290	329	31	38	398
1969	169	124	13	12	4	322	353	46	54	453
1970	171	101	27	8	8	315	366	37	56	459
1971	183	88	22	9	3	305	348	57	59	464
1972	136	70	9	8	8	231	271	43	34	348

(a) See NOTE on page 140.

Infant Mortality Rates. The infant mortality rate expresses the relationship between deaths of infants and the live births occurring in a period, and is stated in terms of number of deaths under one year of age per thousand live births.

The rates for Western Australia and for Australia in the period 1921 to 1972 are shown in the following table.

**INFANT MORTALITY RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA**

Period	Average annual rate		Year	Annual rate	
	Western Australia	Australia		Western Australia	Australia
1921-25	59.14	57.88	1963	20.42	19.55
1926-30	49.27	51.99	1964	19.66	19.06
1931-35	40.81	41.27	1965	21.68	18.47
1936-40	39.70	38.81	1966	19.95	18.73
1941-45	33.30	34.97		17.42	18.26
1946-50	28.15	26.98	1967	20.37	17.78
1951-55	24.41	23.34	1968	21.83	17.92
1956-60	21.42	21.05	1969	21.23	17.88
1961-65	20.73	19.42	1970	19.14	17.29
1966-70	20.25	18.10	1971	15.69	16.72
			1972		

(a) See NOTE on page 140.

In the first decade of the century, the average annual rate (106.07) in Western Australia was considerably above the Australian average of 86.83, and was the highest of any State. Since then both the Western Australian and the Australian rates have shown a remarkable decrease. In the five years ended 1972, Western Australia's average annual rate was 19.58 compared with the Australian rate of 17.50. However, the Western Australian rate of 15.69 in 1972 was the lowest ever recorded in this State and was lower than the rate in any other State except Victoria.

Causes of Infant Deaths. The causes of infant deaths registered during the year 1972 are set out in the following table.

INFANT MORTALITY—CAUSES OF DEATH, 1972 (a)

International number	Cause of death (b)	Males	Females	Persons
740-759	Causes mainly of prenatal and natal origin—			
760-769	Congenital anomalies	30	32	62
762	Attributed to conditions of the mother—			
764-768	Toxaemia of pregnancy	4	6	10
769	Difficult labour	7	5	12
	Other complications of pregnancy and childbirth	31	16	47
770	Other	11	4	15
771	Conditions of placenta	17	6	23
774, 775	Conditions of umbilical cord	3	.....	3
776	Haemolytic disease of newborn	2	2	4
777	Anoxic and hypoxic conditions, n.e.c.	18	19	37
	Immaturity, unqualified	12	5	17
	Other	5	1	6
	Total	140	96	236
000-009	Causes mainly of postnatal origin—			
038	Intestinal infectious diseases	8	8	16
320, 036	Septicaemia	2	2	4
480-486	Meningitis and meningococcal infection	2	1	3
911	Pneumonia	31	13	44
	Inhalation or ingestion of food causing obstruction or suffocation	2	1	3
	Other	22	20	42
	Total	67	45	112
	All causes	207	141	348

n.e.c. denotes 'not elsewhere classified'.

(a) See NOTE on page 140. (b) Classified in accordance with the *International Statistical Classification of Diseases, Injuries, and Causes of Death* (Eighth Revision), operative from 1 January 1968.

Stillbirths. The infant mortality rate discussed above is that most commonly used, and takes no account of stillbirths. It is informative, however, to examine the occurrence of stillbirths in comparison with infant deaths, as in the next table, which deals with the experience of the five years 1968 to 1972.

**STILLBIRTHS (a) AND INFANT DEATHS (b)
NUMBERS AND MASCULINITY**

Year	Stillbirths (a)				Deaths under one year of age			
	Males	Females	Persons	Masculinity (c)	Males	Females	Persons	Masculinity (c)
1968	115	128	243	89.8	236	162	398	145.7
1969	145	105	250	138.1	250	203	453	123.2
1970	166	129	295	128.7	249	210	459	118.6
1971	155	143	298	108.4	265	199	464	133.2
1972	134	124	258	108.1	207	141	348	146.8

(a) Figures refer to stillbirths where the child was of at least 20 weeks' gestation, (b) See NOTE on page 140. (c) Number of males to each 100 females.

The relationship between stillbirths and infant deaths during the same period is further examined in the following table, which shows the numbers of stillbirths and of infant deaths at various ages. The rates shown represent the number of stillbirths, or of infant deaths, per thousand of total births (*i.e.* including stillbirths). Rates for 1972 were the lowest during the five-year period shown.

**STILLBIRTHS (a) AND INFANT DEATHS (b)
NUMBERS AND RATES**

Year	Stillbirths (a)	Infant deaths			Stillbirths and infant deaths (a)
		Under 7 days	Under 28 days	Under one year	
NUMBER					
1968	243	263	290	398	641
1969	250	293	322	453	703
1970	295	272	315	459	754
1971	298	271	305	464	762
1972	258	206	231	348	606
RATE (c)					
1968	12.3	13.3	14.7	20.1	32.4
1969	11.9	13.9	15.3	21.6	33.5
1970	13.5	12.4	14.4	20.9	34.4
1971	12.1	11.0	12.4	18.9	31.1
1972	11.5	9.2	10.3	15.5	27.0

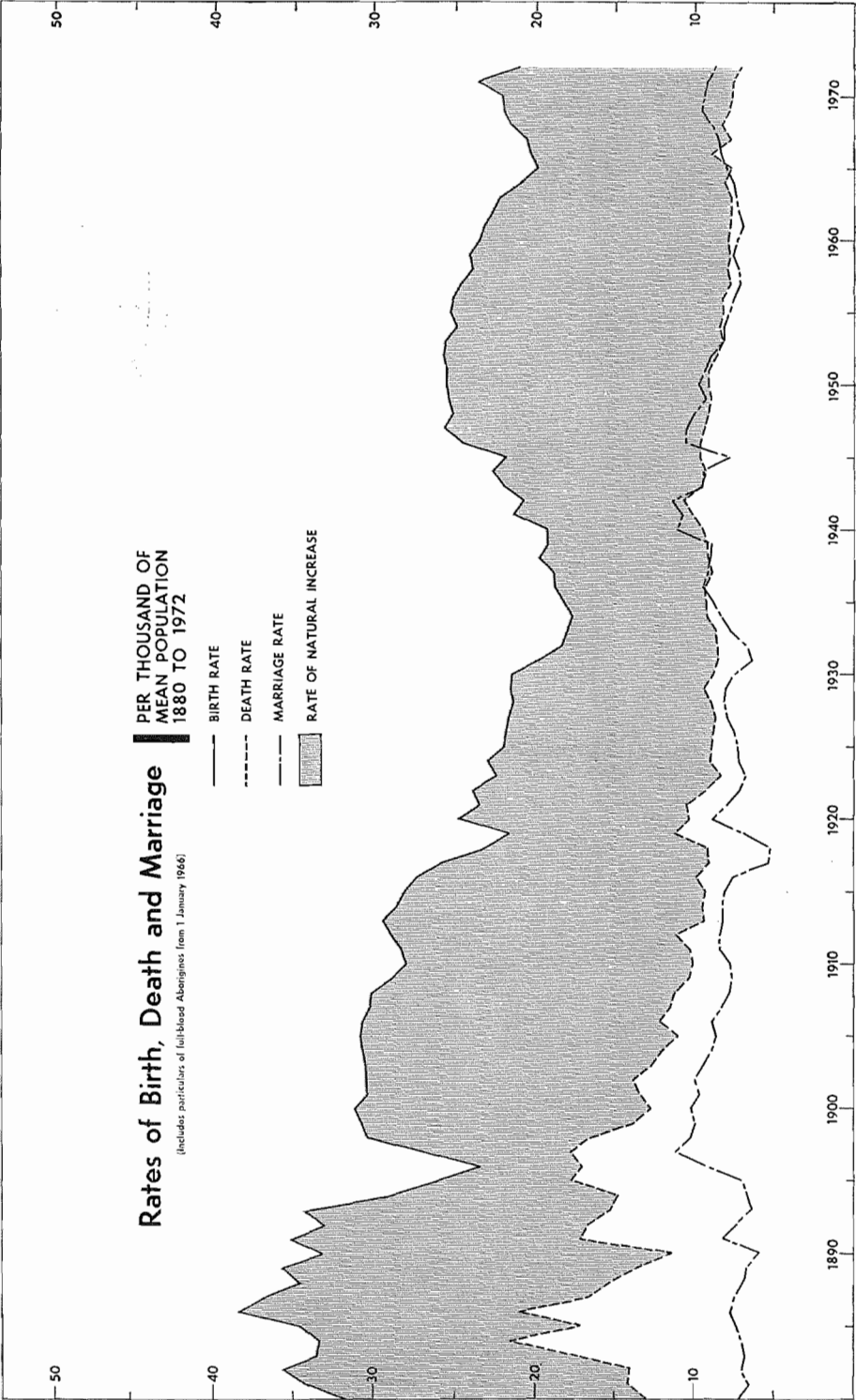
(a) Figures refer to stillbirths where the child was of at least 20 weeks' gestation. (b) See NOTE on page 140. (c) Rate per 1,000 of total births (*i.e.* including stillbirths); see also note (a).

Age-specific Death Rates. The age-specific death rate expresses the number of deaths at specified ages in terms of the population at those particular ages. In the following table, which shows age-specific death rates for Western Australia, the average annual rates for each period relate to deaths in the three years surrounding the date of a Population Census. For Census dates see table on page 121.

AGE-SPECIFIC DEATH RATES (a) (b)

Age group (years)	1910-12	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	1970-72
MALES								
Under 1	} 28.4	23.9	12.8	9.3	7.0	{ (b) 22.9	(b) 22.1	(b) 20.6
1- 4								
5- 9								
10-14								
15-19								
20-24	5.2	4.0	2.5	2.2	2.0	1.7	1.6	1.8
25-29	5.9	4.1	2.9	2.0	1.9	1.5	1.5	1.5
30-34	6.8	5.4	3.1	2.3	1.8	1.6	1.8	1.6
35-39	8.4	6.4	4.0	2.5	2.2	2.1	2.3	2.2
40-44	10.4	7.9	5.7	4.2	3.2	3.5	3.4	2.9
45-49	15.0	12.1	8.8	6.3	5.8	5.0	5.3	5.5
50-54	17.7	17.2	13.5	11.5	9.0	9.5	9.2	8.3
55-59	24.7	23.8	21.4	17.2	15.8	14.8	16.1	14.7
60-64	35.1	34.2	28.3	26.3	24.8	23.8	25.4	25.1
65-69	46.0	49.5	42.4	40.3	41.5	40.3	41.4	40.6
70-74	78.7	72.2	63.4	61.0	62.9	59.6	63.6	61.5
75-79	110.5	115.6	105.1	98.7	93.8	96.7	96.4	98.2
80-84	185.2	184.5	176.8	149.5	146.9	140.9	146.5	153.1
85-89	328.2	283.5	265.0	222.4	225.7	} 244.5	247.4	242.9
90 and over	321.4	566.7	380.8	376.2	297.4			
FEMALES								
Under 1	} 21.8	18.8	8.6	7.9	5.1	{ (b) 19.4	(b) 17.7	(b) 16.6
1- 4								
5- 9								
10-14								
15-19								
20-24	3.8	3.1	1.9	1.2	0.7	0.5	0.7	0.6
25-29	4.4	4.0	2.8	1.5	0.8	0.6	0.7	0.5
30-34	4.9	4.6	3.1	1.6	1.0	0.8	0.8	0.8
35-39	6.2	4.9	4.2	2.6	1.5	1.4	1.4	1.4
40-44	6.7	6.4	5.8	3.1	2.1	2.0	2.1	1.8
45-49	8.4	8.1	6.4	5.1	3.6	3.3	3.3	3.2
50-54	11.8	10.6	9.1	6.8	5.9	5.0	5.3	4.7
55-59	14.2	12.8	10.7	10.1	8.6	7.2	7.6	7.5
60-64	20.4	17.8	17.3	16.1	13.9	11.4	12.6	11.5
65-69	34.6	30.5	29.8	24.6	20.7	19.4	20.7	19.4
70-74	54.5	54.2	44.1	40.8	39.2	35.4	34.6	35.7
75-79	92.5	96.4	74.4	74.2	67.7	60.6	57.8	57.9
80-84	144.1	137.1	121.0	117.6	109.7	101.9	100.6	94.8
85-89	186.7	219.5	192.4	187.5	189.9	} 191.5	182.4	194.7
90 and over	359.0	478.3	397.2	273.8	285.9			
PERSONS								
Under 1	} 25.2	21.4	11.4	8.6	6.1	{ (b) 21.2	(b) 19.9	(b) 18.7
1- 4								
5- 9								
10-14								
15-19								
20-24	4.6	3.5	2.2	1.7	1.4	1.2	1.2	1.2
25-29	5.3	4.0	2.8	1.7	1.4	1.1	1.1	1.0
30-34	6.0	5.0	3.1	1.9	1.4	1.2	1.3	1.2
35-39	7.5	5.7	4.1	2.5	1.8	1.8	1.9	1.8
40-44	9.1	7.2	5.2	3.7	2.7	2.8	2.8	2.4
45-49	12.7	10.4	7.7	5.7	4.8	4.2	4.3	4.4
50-54	15.6	14.6	11.5	9.2	7.6	7.4	7.3	6.6
55-59	20.9	19.6	16.6	13.8	12.3	11.4	12.1	11.1
60-64	29.3	27.9	23.4	21.4	19.3	17.8	19.3	18.3
65-69	41.2	41.7	37.0	32.6	30.9	29.1	30.8	29.9
70-74	68.7	64.3	55.3	50.8	50.4	46.5	47.2	47.7
75-79	103.3	106.7	91.1	86.6	79.8	76.3	74.1	74.0
80-84	170.1	162.6	149.7	133.2	125.9	118.0	118.3	116.3
85-89	266.7	252.0	222.9	204.1	205.8	} 210.7	203.8	210.2
90 and over	333.3	528.3	389.2	312.3	290.4			

(a) Average annual number of deaths at the specified ages during each three-year period per 1,000 of population in the corresponding age group at the relevant Census. Figures for 1960-62 and earlier exclude particulars of full-blood Aborigines (see NOTE on page 140); those for 1965-67 and later relate to total population, i.e. including Aborigines. (b) For age *Under 1*, figures for 1960-62 and later represent infant deaths per 1,000 live births registered.



Australian Life Tables. It has been the practice at each census from 1911 onwards to prepare Life Tables representative of the mortality experience of Australia. The mortality of the Australian population for the thirty years from 1881 to 1910 inclusive was investigated in 1911 by the Commonwealth Statistician. Tables were compiled for each State and for Australia as a whole in respect of each sex for each of the decennial periods 1881 to 1890, 1891 to 1900, and 1901 to 1910. At the Census of 1921, Life Tables were prepared by the Commonwealth Statistician from the recorded census population and the deaths in the three years 1920 to 1922. Tables based on data derived from later censuses have been compiled by the Commonwealth Actuary.

The expectation of life of males and females at various ages as revealed by these investigations is shown in the following table.

EXPECTATION OF LIFE (a)—AUSTRALIA: 1881-90 TO 1965-67
(Years)

Age last birthday (years)	1881-90	1891-1900	1901-10	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67
MALES									
0	47·20	51·08	55·20	59·15	63·48	66·07	67·14	67·92	67·63
5	52·86	55·61	57·91	60·43	62·57	63·77	64·32	64·77	64·36
10	48·86	51·43	53·53	56·01	58·02	59·04	59·53	59·93	59·50
15	44·45	46·98	49·03	51·44	53·36	54·28	54·72	55·07	54·63
20	40·58	42·81	44·74	46·99	48·81	49·64	50·10	50·40	49·98
25	37·10	38·90	40·60	42·70	44·37	45·04	45·54	45·80	45·40
30	33·64	35·11	36·52	38·44	39·90	40·40	40·90	41·12	40·72
35	30·06	31·34	32·49	34·20	35·46	35·79	36·25	36·45	36·04
40	26·50	27·65	28·56	30·05	31·11	31·23	31·65	31·84	31·44
45	23·04	23·99	24·78	26·03	26·87	26·83	27·18	27·38	26·99
50	19·74	20·45	21·16	22·20	22·83	22·67	22·92	23·13	22·76
55	16·65	17·08	17·67	18·51	19·03	18·84	19·00	19·18	18·83
60	13·77	13·99	14·35	15·08	15·57	15·36	15·47	15·60	15·27
65	11·06	11·25	11·31	12·01	12·40	12·25	12·33	12·47	12·16
70	8·82	8·90	8·67	9·26	9·60	9·55	9·59	9·77	9·52
75	6·72	6·70	6·58	6·87	7·19	7·23	7·33	7·47	7·33
80	5·11	5·00	4·96	5·00	5·22	5·36	5·47	5·57	5·51
85	3·86	3·79	3·65	3·62	3·90	3·84	4·01	4·08	4·07
90	2·91	2·91	2·64	2·60	2·99	2·74	2·93	3·02	3·05
95	2·16	2·16	1·88	1·86	2·11	1·93	2·10	2·29	2·33
100	1·32	1·29	1·18	1·17	1·10	....	....	....	1·82
FEMALES									
0	50·84	54·76	58·84	63·31	67·14	70·63	72·75	74·18	74·15
5	56·00	58·64	60·80	63·64	65·64	67·91	69·61	70·78	70·64
10	51·95	54·46	56·39	59·20	61·02	63·11	64·78	65·92	65·75
15	47·54	49·97	51·86	54·55	56·29	58·27	59·90	61·01	60·84
20	43·43	45·72	47·52	50·03	51·67	53·47	55·06	56·16	56·00
25	39·67	41·69	43·36	45·71	47·19	48·74	50·24	51·32	51·17
30	36·13	37·86	39·33	41·48	42·77	44·08	45·43	46·49	46·34
35	32·58	34·14	35·37	37·28	38·37	39·46	40·67	41·70	41·56
40	29·08	30·49	31·47	33·14	34·04	34·91	36·00	36·99	36·85
45	25·56	26·69	27·59	28·99	29·74	30·45	31·44	32·38	32·26
50	22·06	22·93	23·69	24·90	25·58	26·14	27·03	27·92	27·83
55	18·64	19·29	19·85	20·95	21·58	22·04	22·81	23·63	23·58
60	15·39	15·86	16·20	17·17	17·74	18·11	18·78	19·51	19·52
65	12·27	12·75	12·88	13·60	14·15	14·44	15·02	15·68	15·70
70	9·70	9·89	9·96	10·41	10·98	11·14	11·62	12·19	12·23
75	7·24	7·37	7·59	7·73	8·23	8·32	8·69	9·16	9·22
80	5·27	5·49	5·73	5·61	6·01	6·02	6·30	6·68	6·72
85	3·90	4·12	4·19	4·06	4·30	4·32	4·52	4·79	4·85
90	2·98	3·07	2·99	2·91	3·05	3·08	3·24	3·48	3·53
95	2·25	2·18	2·10	2·07	2·00	2·14	2·31	2·59	2·66
100	1·37	1·23	1·24	1·24	1·02	....	....	....	2·04

(a) Figures for years prior to 1965-67 refer to population exclusive of full-blood Aborigines; see letterpress *Aborigines* on page 121.

MARRIAGES

The number of marriages registered in Western Australia in each of the ten years 1963 to 1972 is shown in the following table. Marriages celebrated by ministers of religion are distinguished from those celebrated by civil officers, and the numbers of minors marrying are also shown.

MARRIAGES REGISTERED (a)

Year	Marriages celebrated by—		All marriages	Proportion celebrated by civil officers (per cent)	Marriages of minors (b)				
	Ministers of religion	Civil officers			Males	Per cent of all bridegrooms	Females	Per cent of all brides	Total minors married
1963	4,907	848	5,755	14·74	705	12·25	2,437	42·35	3,142
1964	5,151	872	6,023	14·48	725	12·04	2,609	43·32	3,334
1965	5,506	942	6,448	14·61	964	14·95	2,907	45·08	3,871
1966	5,996	1,006	7,002	14·37	1,057	15·10	3,248	46·39	4,305
1967	6,289	1,141	7,430	15·36	1,220	16·42	3,558	47·89	4,778
1968	6,810	1,276	8,086	15·78	1,352	16·72	3,841	47·50	5,193
1969	7,463	1,530	8,993	17·01	1,391	15·47	4,184	46·53	5,575
1970	7,473	1,754	9,227	19·01	1,528	16·56	4,369	47·35	5,897
1971	7,478	1,904	9,382	20·29	1,571	16·74	4,520	48·18	6,091
1972	7,230	1,890	9,120	20·72	1,538	16·86	4,479	49·11	6,017

(a) See NOTE on page 140. (b) Prior to an amendment to the Marriage Act in 1973, a minor was defined as 'a person who has not attained the age of twenty-one years'. The amendment, which came into operation on 1 July 1973, reduces the age to eighteen years.

Age at Marriage. The relative ages of bridegrooms and brides who married in Western Australia in 1972 are shown in the following table.

RELATIVE AGES OF BRIDEGROOMS AND BRIDES, 1972 (a)

Age of bridegroom (years)	Total bridegrooms	Age of bride (years)							
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over
Under 20	743	1	641	97	2	2	....	....	....
20-24	4,938	1	2,171	2,559	186	16	3	2	....
25-29	1,943	....	326	1,102	426	68	19	2	....
30-34	562	....	36	187	190	97	34	10	8
35-39	252	....	9	48	74	65	39	11	6
40-44	170	....	3	17	24	32	35	28	31
45-49	171	....	....	4	13	22	39	32	61
50-54	106	....	....	1	5	7	10	22	61
55-59	89	....	....	....	3	9	8	9	60
60-64	58	....	....	....	....	....	....	7	51
65 and over	88	....	....	....	1	1	1	....	85
Total brides	9,120	2	3,186	4,015	924	319	188	123	363

(a) See NOTE on page 140.

The following table gives details of the average age and of the marital status of bridegrooms and brides in each of the five years to 1972.

AVERAGE AGES OF BRIDEGROOMS AND BRIDES (a)

Year	Average age of bridegrooms (years)				Average age of brides (years)			
	Bachelors	Widowers	Divorced	Total	Spinsters	Widows	Divorced	Total
1968	24·57	55·12	41·04	26·37	21·57	48·16	37·27	23·41
1969	24·58	54·94	40·30	26·36	21·71	47·82	37·13	23·51
1970	24·31	56·88	40·42	26·25	21·65	49·79	36·88	23·48
1971	24·44	54·40	39·36	26·27	21·61	50·41	36·66	23·47
1972	24·31	54·26	39·91	26·38	21·59	48·99	35·61	23·53

(a) See NOTE on page 140.

The following table shows the age and the marital status at time of marriage of bridegrooms and brides who married in Western Australia during 1972.

AGE AND MARITAL STATUS OF
BRIDEGROOMS AND BRIDES, 1972 (a)

Age at marriage (years)	Bridegrooms				Brides			
	Bachelors	Widowers	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 20	743	....	....	743	3,187	1	....	3,188
20-24	4,919	7	12	4,938	3,921	10	84	4,015
25-29	1,807	11	125	1,943	745	15	164	924
30-34	405	15	142	562	161	25	133	319
35-39	107	15	130	252	58	25	105	188
40-44	59	13	98	170	18	33	72	123
45-49	44	27	100	171	20	42	64	126
50-54	25	27	54	106	13	38	39	90
55-59	14	38	37	89	5	34	18	57
60-64	8	34	16	58	2	33	6	41
65 and over	8	64	16	88	7	38	4	49
Total	8,139	251	730	9,120	8,137	294	689	9,120

(a) See NOTE on page 140.

The numbers and ages of minors who married in Western Australia during each of the five years 1968 to 1972 are given in the following table.

MARRIAGES OF MINORS (a)

Year	Bridegrooms							Brides						
	Age last birthday (years)							Age last birthday (years)						
	Under 16	16	17	18	19	20	Under 21	Under 16	16	17	18	19	20	Under 21
1968	20	213	422	697	1,352	16	211	481	857	1,101	1,175	3,841
1969	11	224	440	716	1,391	6	231	517	905	1,200	1,325	4,184
1970	1	17	231	498	781	1,528	14	220	540	979	1,273	1,343	4,369
1971	2	17	247	494	811	1,571	11	238	577	1,038	1,324	1,332	4,520
1972	19	247	477	795	1,538	16	231	548	1,038	1,355	1,291	4,479

(a) See NOTE on page 140; see also footnote (b) to first table on previous page.

Marriage Rates. The average annual marriage rates per thousand of mean population for Western Australia and for Australia in each five-year period from 1921 to 1970, as well as the rates for each of the years from 1963 to 1972, are shown in the following table.

MARRIAGE RATES (a)
WESTERN AUSTRALIA AND AUSTRALIA

Period	Average annual rate (b)		Year	Annual rate (b)	
	Western Australia	Australia		Western Australia	Australia
1921-25	7.27	8.04	1963	7.40	7.42
1926-30	7.80	7.52	1964	7.55	7.73
1931-35	7.58	7.16	1965	7.91	8.25
1936-40	9.49	9.35			
1941-45	9.74	9.94	1966	8.25	8.28
			1967	8.44	8.47
1946-50	10.01	9.77			
1951-55	8.44	8.29	1968	8.83	8.85
1956-60	7.36	7.50	1969	9.41	9.16
1961-65	7.43	7.63	1970	9.28	9.26
			1971	9.09	9.20
1966-70	8.87	8.81	1972	8.63	8.78

(a) See NOTE on page 140. (b) Rates for years prior to 1971 are based on final census results; those for 1971 and later are subject to revision after the next census.

Religious and Civil Marriages. The *Marriage Act* 1961-1973 (Commonwealth) provides that marriages may be celebrated either by ministers of religion registered for the purpose with the Registrar of Ministers of Religion in each State or Territory or by certain civil officers, usually District Registrars.

The following table, which relates to marriages registered in Western Australia during the period 1968 to 1972, shows the numbers and proportions celebrated by ministers of the principal religious denominations and by civil officers.

RELIGIOUS AND CIVIL MARRIAGES (a)

Category of authorised celebrant	1968	1969	1970	1971	1972	
					Number	Per cent of total
Registered ministers of recognised religious denominations (b)—						
Church of England in Australia	2,560	2,754	2,778	2,700	2,589	28.4
Church of Jesus Christ of Latter Day Saints	15	14	15	21	17	0.2
Churches of Christ in Australia	190	162	175	202	163	1.8
Congregational Union of Australia	128	109	123	114	98	1.1
Jehovah's Witnesses	24	36	30	39	43	0.5
Jewry	7	14	8	16	19	0.2
Lutheran Church (c)	53	46	47	39	47	0.5
Orthodox Church (c)	71	82	75	93	83	0.9
Roman Catholic Church	2,122	2,436	2,490	2,515	2,395	26.3
Seventh-day Adventist Church	42	45	28	41	49	0.5
The Baptist Union of Australia	105	110	133	118	127	1.4
The Methodist Church of Australasia	892	975	962	932	962	10.5
The Presbyterian Church of Australia	410	523	475	478	452	5.0
The Salvation Army	46	48	33	37	47	0.5
Other	116	72	63	78	109	1.2
Total	6,781	7,426	7,435	7,423	7,200	78.9
Other authorised celebrants—						
Ministers of religion	29	37	38	55	30	0.3
Civil officers	1,276	1,530	1,754	1,904	1,890	20.7
Total marriages	8,086	8,993	9,227	9,382	9,120	100.0
Proportion of total (per cent)—						
Ministers of religion	84.2	83.0	81.0	79.7	.....	79.3
Civil officers	15.8	17.0	19.0	20.3	.....	20.7

(a) See NOTE on page 140.

(b) Under authority of the Marriage Act.

(c) Includes denominations grouped under this heading in the proclamation made under the Marriage Act.

DIVORCE

The *Matrimonial Causes Act* 1959-1966 (Commonwealth) establishes uniform grounds throughout Australia for the termination of marriage. Grounds for dissolution of marriage (i.e. divorce) include adultery, desertion for not less than two years, separation for not less than five years, cruelty, drunkenness, and failure to comply with maintenance orders. Grounds for nullity of marriage include bigamy and incapacity to consummate the marriage.

Decrees may be granted by a Court for dissolution of marriage, nullity of marriage, judicial separation, and restitution of conjugal rights. Orders may also be made for the custody and welfare of children, maintenance, the settlement of property, and damages for adultery.

A decree for dissolution of marriage and nullity of voidable marriage is in the first instance a decree *nisi*. The decree automatically becomes absolute at the expiration of three months, unless it is in the meantime rescinded; appeal proceedings are instituted; or there are children of the marriage under the age of sixteen years, in which case the court must be satisfied that appropriate arrangements have been made for their welfare before the decree will become absolute. The parties cannot remarry until a decree *nisi* has become absolute. A decree of judicial separation is available on most of the grounds available for divorce.

Statistics of decrees granted, as shown in the second table on the next page, refer to decrees *nisi* made absolute, except for the following cases where no decrees *nisi* are granted: (i) decrees of nullity of void marriage, as distinct from nullity of voidable marriage. (A void marriage is invalid because of failure to meet a legal requirement, and the original

decree of nullity is final. A valid marriage is voidable on proof of one or more of the grounds set out in the Matrimonial Causes Act); and (ii) decrees of judicial separation, which do not dissolve the marriage and may be discharged on resumption of cohabitation.

PETITIONS FILED

Year	Petitions for—				Total petitions	Petitioner	
	Dissolution of marriage	Nullity of marriage	Judicial separation	Restitution of conjugal rights		Husband	Wife
1968	995	5	3	3	1,006	489	517
1969	1,059	5	1	6	1,071	503	568
1970	1,204	2	....	1	1,207	578	629
1971	1,451	3	....	5	1,459	678	781
1972	1,628	5	1	2	1,636	752	884

The following table shows the number of decrees granted during the period 1968 to 1972, together with the grounds for the decrees.

DECREES GRANTED

Ground	1968	1969	1970	1971	1972		
					To husband	To wife	Total

DISSOLUTION OF MARRIAGE

Single grounds—							
Adultery	301	332	370	468	306	273	579
Desertion	255	305	305	332	176	213	389
Separation	204	183	169	191	68	122	190
Cruelty	22	16	16	23	....	22	22
Drunkenness	9	7	8	10	1	10	11
Intoxication by drugs ....	....	....	....	1	....	....	....
Failure to pay maintenance	7	7	1	1	....	2	2
Non-compliance with restitution decree	1	2	....	....	....	....	....
Refusal to consummate ....	....	1	1	....	5	3	8
Insanity ....	....	....	2	....	....	....	....
Frequent convictions	1	....	3	1	....	2	2
Imprisonment ....	....	1	....	1	....	1	1
Other single grounds	1	....	....	1	....	1	1
Dual grounds—							
Adultery and—							
Separation ....	....	....	1	....	....	....	....
Cruelty ....	....	....	....	....	....	3	3
Other ....	....	....	....	....	....	1	1
Desertion and—							
Adultery	4	8	6	14	7	6	13
Separation	1	4	3	10	8	1	9
Cruelty	2	....	....	....	....	5	5
Drunkenness ....	....	....	....	1	....	....	....
Failure to pay maintenance	1	2	....	1	....	....	....
Other ....	....	....	....	....	....	1	1
Cruelty and—							
Drunkenness	3	3	3	8	....	6	6
Frequent convictions ....	....	....	....	1	....	....	....
Three grounds or more ....	....	1	1	....	....	....	....
Total	812	872	889	1,064	571	672	1,243

NULLITY OF MARRIAGE

Bigamy ....	....	....	....	2	....	....	....
Incapacity to consummate ....	....	....	....	....	1	....	1
Pregnancy	1
Unsound mind	1
Total	1	1	2	1	1

JUDICIAL SEPARATION

Separation	2
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In the following table particulars are given of the duration of marriage, *i.e.* the interval between marriage and the time of dissolution, for marriages dissolved during the five years 1968 to 1972.

DISSOLUTIONS OF MARRIAGE—DURATION OF MARRIAGE

Year of dissolution of marriage	Marriages dissolved after a duration of—								Total marriages dissolved
	Under 5 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35 years and over	
1968	71	219	167	133	108	61	34	19	812
1969	92	223	180	129	128	71	32	17	872
1970	106	247	167	116	120	81	32	20	889
1971	120	304	199	153	161	74	30	23	1,064
1972	130	376	234	181	161	103	38	20	1,243

The following table shows, for the year 1972, the number of marriages dissolved classified according to duration of marriage and the number of children of the marriage.

DISSOLUTIONS OF MARRIAGE—DURATION OF MARRIAGE AND NUMBER OF CHILDREN OF THE MARRIAGE (a), 1972

Duration of marriage (years)	Marriages dissolved with—							Total marriages dissolved	Total number of children
	No children	1 child	2 children	3 children	4 children	5 children	6 or more children		
0-4	73	39	15	3	...	...	...	130	78
5-9	114	137	97	20	5	1	2	376	428
10-14	28	34	89	62	18	3	...	234	485
15-19	19	14	52	63	21	7	...	181	458
20-24	21	29	46	27	23	9	6	161	377
25-29	31	31	25	9	5	1	1	103	141
30-34	24	8	3	3	...	...	...	38	23
35 and over	18	2	...	...	...	...	...	20	2
Decree to—									
Husband	166	140	158	65	29	8	5	571	839
Wife	162	154	169	122	43	13	9	672	1,153
Total	328	294	327	187	72	21	14	1,243	1,992

(a) Number of children living and under 21 years of age at time of petition. Includes children deemed to be children of the marriage in accordance with Section 6 of the Matrimonial Causes Act.

The following table shows, for the year 1972, the ages of husband and wife at the time of dissolution of the marriage.

DISSOLUTIONS OF MARRIAGE—RELATIVE AGES OF PARTIES AT TIME OF DISSOLUTION, 1972

Age group of husband (years)	Age group of wife (years)										Total husbands
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 and over	
Under 20
20-24	1	41	7	...	...	...	...	...	...	...	49
25-29	...	95	128	15	3	...	...	...	...	...	241
30-34	...	15	112	97	13	2	1	...	...	...	240
35-39	27	79	68	14	2	...	...	...	190
40-44	5	26	74	69	9	4	...	...	187
45-49	3	4	20	52	56	10	...	...	145
50-54	1	2	1	13	38	28	6	2	91
55-59	5	12	22	13	2	54
60 and over	1	1	6	11	7	20	46
Total wives	1	151	283	223	180	156	124	75	26	24	1,243



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Trichinium Manglesii (Lindl.)

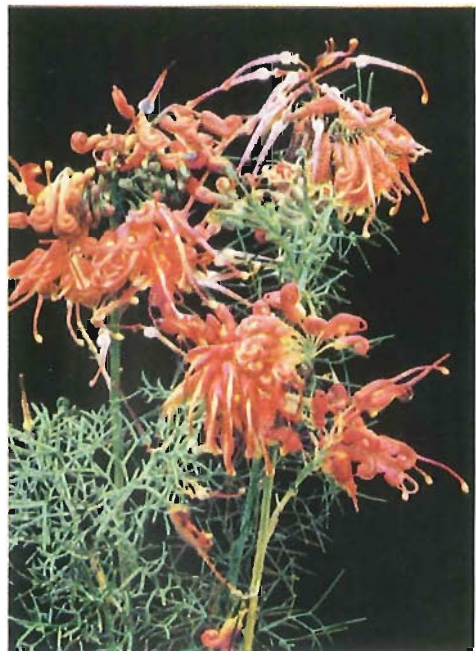
PLATE 6—A MEMBER OF THE AMARANTH FAMILY (AMARANTHACEAE)



Isopogon formosus R. Br.



Isopogon latifolius R. Br.



Grevillea Wilsonii A. Cunn.



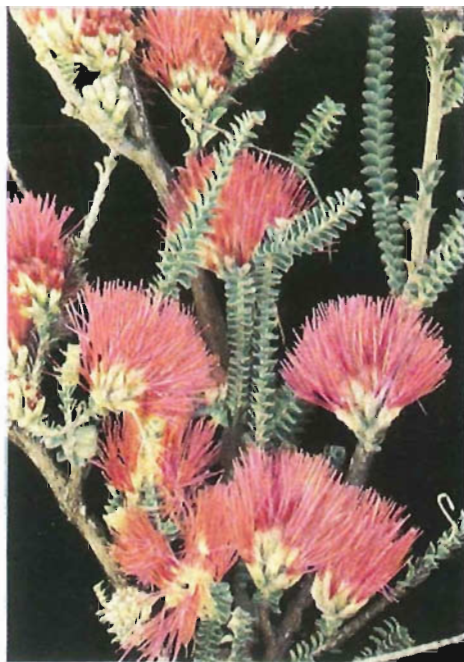
Hakea bucculenta C. A. Gardn.

PLATE 7—BANKSIA FAMILY (PROTEACEAE)

Blocks by courtesy of West Australian Newspapers Limited



Beaufortia Schaueri Preiss.



Beaufortia squarrosa Schau.



Callistemon speciosus (Sims) D.C.



Melaleuca Conothamnoides C. A. Gardn.

PLATE 8—MYRTLE FAMILY (MYRTACEAE)

Blocks by courtesy of West Australian Newspapers Limited



Dampiera luteiflora F. Muell.



Dampiera Wellsiana F. Muell.



Scaevola crassifolia Labill.



Lechenaultia formosa R. Br.

PLATE 9—LESCENAULTIA FAMILY (GOODENIACEAE)

Blocks by courtesy of West Australian Newspapers Limited

CHAPTER V—SOCIAL CONDITIONS

Part 1—Education

PRIMARY, SECONDARY AND TECHNICAL EDUCATION

In Western Australia, education at primary and secondary levels is provided at government schools administered and staffed by the Education Department and at non-government schools, most of which are conducted by the principal religious bodies. Reference to the Technical Education Division of the Education Department will be found on pages 167-9.

Primary and Secondary School Enrolments

The following tables give a classification according to age of pupils enrolled at government and non-government schools on 1 August in the years shown.

GOVERNMENT AND NON-GOVERNMENT SCHOOLS
PUPILS CLASSIFIED ACCORDING TO AGE

Age last birthday (a) (years)	Government schools (b)					Non-government schools (c)				
	1968	1969	1970	1971	1972	1968	1969	1970	1971	1972
Under 6	6,409	6,584	6,675	6,951	6,998	1,457	1,304	1,379	1,371	1,376
6½	16,042	16,965	16,765	16,703	16,815	3,456	3,617	3,414	3,276	3,306
7	16,355	16,818	17,470	17,348	17,103	3,535	3,460	3,724	3,517	3,384
8	16,241	17,165	17,474	18,179	17,764	3,442	3,399	3,465	3,587	3,391
9	15,975	16,810	17,826	17,983	18,424	3,270	3,449	3,461	3,509	3,553
10	15,967	16,648	17,284	18,151	18,237	3,276	3,379	3,438	3,474	3,517
11	15,574	16,308	16,785	17,759	18,171	3,321	3,388	3,484	3,528	3,546
12	15,436	15,646	16,394	16,931	17,524	3,747	3,725	3,845	3,994	3,832
13	14,507	15,231	15,434	16,171	16,512	4,116	4,185	4,160	4,144	4,384
14	13,305	14,399	15,048	15,245	15,807	3,961	4,002	4,080	4,043	4,130
15	9,227	9,327	10,179	10,921	11,478	3,249	3,303	3,471	3,515	3,420
16	3,822	4,198	4,446	5,027	5,731	2,112	2,177	2,175	2,327	2,492
17	1,690	1,901	2,069	2,326	2,718	1,114	1,239	1,287	1,233	1,396
18 and over	196	195	175	194	257	183	181	175	163	163
Total	160,746	168,195	174,024	179,889	183,539	40,239	40,808	41,558	41,681	41,910

(a) At 1 August. Children may commence school at the beginning of the year in which they attain the age of 6 years. Except in special circumstances, attendance is compulsory from the age of 6 years and upward to the end of the year in which the child attains the age of 15 years.

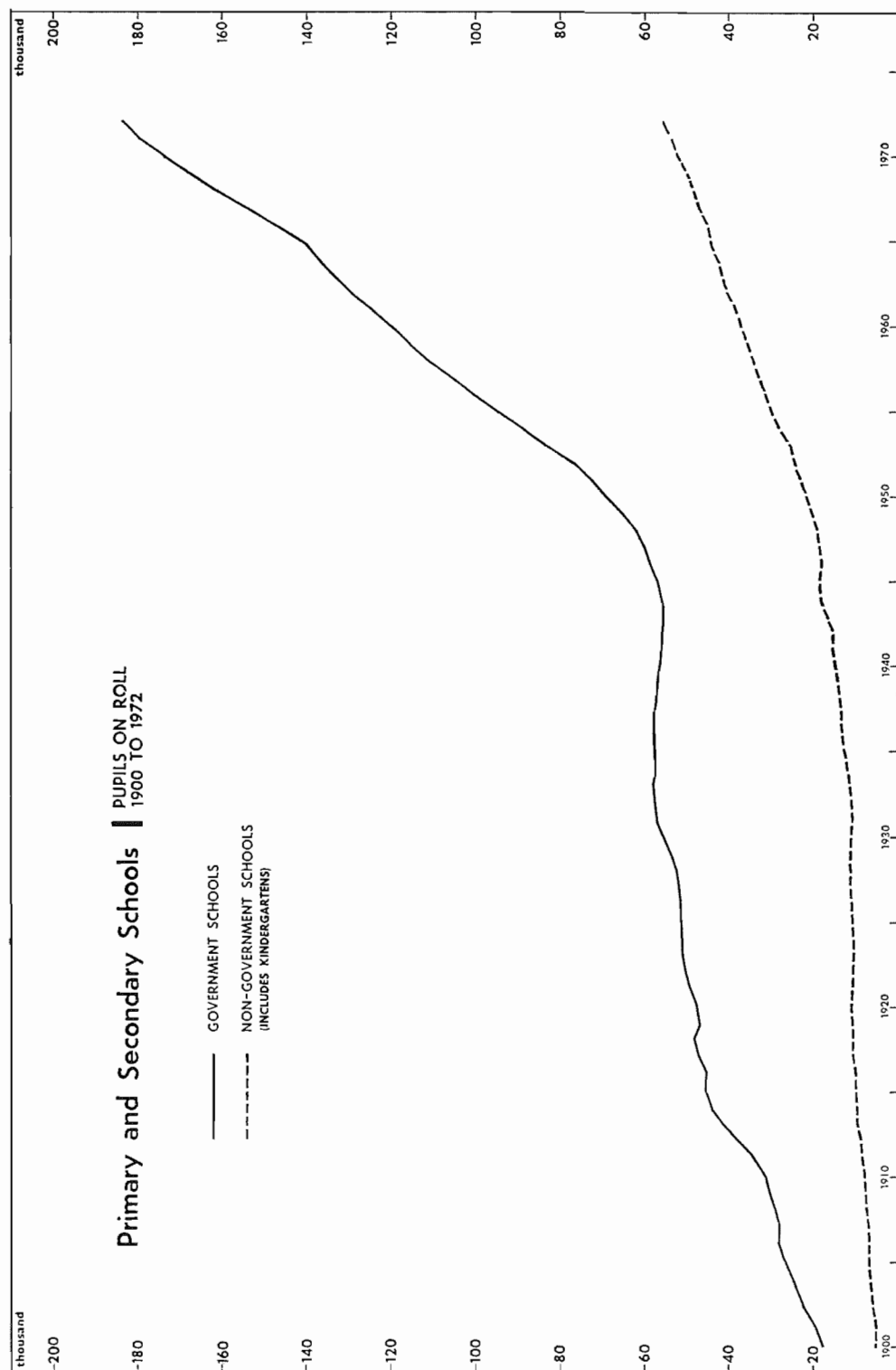
(b) Includes Special Schools and Classes; see letterpress on page 166. Excludes Technical Schools and Colleges; see table on page 168. Excludes also part-time students enrolled in the Western Australian Correspondence School.

(c) Excludes pupils attending kindergarten schools and pupils in kindergarten grades at other non-government schools; see pages 169-70.

GOVERNMENT AND NON-GOVERNMENT SCHOOLS
PUPILS CLASSIFIED ACCORDING TO AGE AND SEX: AUGUST 1972

Age last birthday (a) (years)	Government schools (b)			Non-government schools (c)			All schools (b) (c)		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Under 6	3,641	3,357	6,998	654	722	1,376	4,295	4,079	8,374
6	8,738	8,077	16,815	1,626	1,680	3,306	10,364	9,757	20,121
7	8,867	8,236	17,103	1,625	1,759	3,384	10,492	9,995	20,487
8	9,221	8,543	17,764	1,588	1,803	3,391	10,809	10,346	21,155
9	9,652	8,772	18,424	1,661	1,892	3,553	11,313	10,664	21,977
10	9,522	8,715	18,237	1,631	1,886	3,517	11,153	10,601	21,754
11	9,588	8,583	18,171	1,642	1,904	3,546	11,230	10,487	21,717
12	9,201	8,323	17,524	1,754	2,098	3,852	10,955	10,421	21,376
13	8,676	7,836	16,512	2,118	2,266	4,384	10,794	10,102	20,896
14	8,227	7,580	15,807	1,944	2,186	4,130	10,171	9,766	19,937
15	6,137	5,341	11,478	1,670	1,750	3,420	7,807	7,091	14,898
16	3,219	2,512	5,731	1,249	1,243	2,492	4,468	3,755	8,223
17	1,607	1,111	2,718	721	675	1,396	2,328	1,786	4,114
18 and over	200	57	257	94	69	163	294	126	420
Total	96,496	87,043	183,539	19,977	21,933	41,910	116,473	108,976	225,449

For footnotes, see previous table.



School censuses are conducted annually at or about the beginning of August in all States and the internal Territories of Australia. The Western Australian Correspondence School (see letterpress on page 166), special schools and classes (see letterpress on page 166), schools in institutional homes, hospitals and similar establishments, and kindergartens are included in the census. Institutions such as business colleges and coaching establishments are excluded.

In the following table pupils enrolled in primary grades at 1 August 1972 are classified according to grade and age. The figures exclude particulars of pupils attending kindergarten schools and pupils in kindergarten grades at other non-government schools. Reference to kindergarten schools will be found on pages 169-70.

PRIMARY PUPILS—AGE AND GRADE AT 1 AUGUST 1972

Age last birthday (years)	Grade							Ungraded pupils—		Total
	1	2	3	4	5	6	7	In special classes (a)	In special schools (a)	

GOVERNMENT SCHOOLS (b)

Under 6	6,907	5	...	...	...	...	...	1	85	6,998
6	10,722	5,979	2	...	...	...	...	31	81	16,815
7	686	10,451	5,782	12	...	...	...	71	101	17,103
8	36	961	10,681	5,851	15	...	...	105	115	17,764
9	4	63	1,182	11,078	5,743	6	...	241	107	18,424
10	2	11	95	1,169	11,043	5,529	15	260	113	18,237
11	...	2	16	73	1,210	11,034	5,446	261	111	18,153
12	...	1	1	7	93	1,229	10,673	191	110	12,305
13	...	1	1	2	6	75	1,151	61	131	1,428
14	...	...	...	1	4	14	48	1	118	186
15	...	...	...	...	...	1	15	...	87	103
16	...	...	1	...	...	...	...	...	93	94
17	...	...	...	...	...	...	...	...	63	63
18 and over	...	...	...	...	...	...	...	...	25	25
Total	18,357	17,474	17,761	18,193	18,114	17,888	17,348	1,223	1,340	127,698

NON-GOVERNMENT SCHOOLS (c)

Under 6	1,375	1	...	...	...	...	...	...	...	1,376
6	2,139	1,162	5	...	...	...	...	...	...	3,306
7	139	2,083	1,154	8	...	...	...	...	...	3,384
8	7	192	2,174	1,014	4	...	...	...	...	3,391
9	1	11	289	2,149	1,096	7	...	...	...	3,553
10	...	2	30	290	2,139	1,047	9	...	...	3,517
11	...	1	12	40	260	2,125	1,098	...	...	3,536
12	...	...	3	10	33	254	2,213	...	...	2,513
13	...	...	2	8	14	43	307	...	...	374
14	...	...	...	2	...	4	40	...	...	46
15	...	...	...	...	...	2	8	...	...	10
16	...	...	...	...	...	1	2	...	...	3
17	...	...	...	...	...	...	...	...	...	...
18 and over	...	...	...	...	...	...	...	...	...	...
Total	3,661	3,452	3,669	3,521	3,546	3,483	3,677	...	...	25,009

ALL SCHOOLS (b) (c)

Under 6	8,282	6	...	...	...	...	...	1	85	8,374
6	12,861	7,141	7	...	...	...	...	31	81	20,121
7	825	12,534	6,936	20	...	...	...	71	101	20,487
8	43	1,153	12,855	6,865	19	...	...	105	115	21,155
9	5	74	1,471	13,227	6,839	13	...	241	107	21,977
10	2	13	125	1,459	13,182	6,576	24	260	113	21,754
11	...	3	28	113	1,470	13,159	6,544	261	111	21,689
12	...	1	4	17	126	1,483	12,886	191	110	14,818
13	...	1	3	10	20	118	1,458	61	131	1,802
14	...	...	...	3	4	18	88	1	118	232
15	...	...	...	...	...	3	23	...	87	113
16	...	...	1	...	...	1	2	...	93	97
17	...	...	...	...	...	...	...	...	63	63
18 and over	...	...	...	...	...	...	...	...	25	25
Total	22,018	20,926	21,430	21,714	21,660	21,371	21,025	1,223	1,340	152,707

(a) See letterpress *Special Schools and Classes* on page 166. (b) Excludes part-time students enrolled in the Western Australian Correspondence School. (c) Excludes 13,291 pupils attending kindergarten schools and 388 pupils in kindergarten grades at other non-government schools.

The following table gives a classification of school pupils at secondary level at 1 August 1972 according to year of study and age of pupil.

SECONDARY PUPILS—AGE AND YEAR OF STUDY AT 1 AUGUST 1972

Age last birthday (years)	Year of study					Ungraded pupils in special classes (a)	Total
	1	2	3	4	5		
GOVERNMENT SCHOOLS (b)							
11	18	....	....	....	....	....	18
12	5,168	15	....	....	....	36	5,219
13	9,993	4,921	17	....	....	153	15,084
14	1,055	9,702	4,711	2	....	151	15,621
15	88	978	8,362	1,897	4	46	11,375
16	7	98	845	3,539	1,144	4	5,637
17	3	12	90	297	2,253	....	2,655
18 and over	....	3	6	7	216	....	232
Total	16,332	15,729	14,031	5,742	3,617	390	55,841
NON-GOVERNMENT SCHOOLS							
11	9	1	....	....	....	....	10
12	1,328	10	1	....	....	....	1,339
13	2,669	1,329	12	....	....	....	4,010
14	278	2,506	1,294	6	....	....	4,084
15	24	255	2,354	773	4	....	3,410
16	2	21	266	1,586	614	....	2,489
17	....	2	19	117	1,258	....	1,396
18 and over	....	....	....	8	155	....	163
Total	4,310	4,124	3,946	2,490	2,031	....	16,901
ALL SCHOOLS (b)							
11	27	1	....	....	....	....	28
12	6,496	25	1	....	....	36	6,558
13	12,662	6,250	29	....	....	153	19,094
14	1,333	12,208	6,005	8	....	151	19,705
15	112	1,233	10,716	2,670	8	46	14,785
16	9	119	1,111	5,125	1,758	4	8,126
17	3	14	109	414	3,511	....	4,051
18 and over	....	3	6	15	371	....	395
Total	20,642	19,853	17,977	8,232	5,648	390	72,742

(a) See letterpress *Special Schools and Classes* on page 166.
Australian Correspondence School.

(b) Excludes part-time students enrolled in the Western

THE EDUCATION DEPARTMENT

The Education Department is responsible for the organisation and management of the State Government's education programme and is controlled by a Director-General of Education responsible to the Minister for Education. The administrative structure of the Department provides for four Divisions. The Divisions, each of which is in the charge of a Director, are those of Primary Education, Secondary Education, Technical Education, and Special Services. Special Branches attached to particular Divisions are concerned with such activities as physical education (including swimming instruction), music, drama, art and crafts, visual education and publications. In addition there is provision for a number of other services which are concerned with particular aspects of the education and welfare of school children, such as the Nature Advisory Service, and the School Medical and Dental Services conducted in collaboration with the Department of Public Health.

Primary and Secondary Schools

Instruction in the primary school is given in seven grades. A child who makes normal progress completes the course at the age of twelve years and may then enter high school. A Senior High School provides tuition in five years of study leading to the Leaving Examination, which is the final examination in Western Australian secondary schools and is normally taken at the age of seventeen years. A High School gives instruction in the

first three years of the secondary school curriculum. A Junior High School is one which provides primary schooling and three years of post-primary schooling. At some centres where there is no high school, post-primary subjects are taught at the primary school.

Any student who completes at least one year of secondary schooling may qualify for an Achievement Certificate, but with normal progress a student is awarded the Certificate after completing three years of secondary schooling at the age of fifteen years.

The Education Act provides for a Board of Secondary Education. The principal functions of the Board, are in respect of secondary schools and other bodies and institutions conducting courses of secondary education, to approve courses of study; assist in assessment of students; ensure comparability of such assessments; and issue certificates of achievement to students.

The following table shows the number of schools staffed and controlled by the Education Department, the number of teachers employed, and the number of pupils classified according to grade of education, for each of the years 1968 to 1972.

GOVERNMENT SCHOOLS

Particulars	At 1 August—				
	1968	1969	1970	1971	1972
NUMBER OF SCHOOLS					
Primary schools	482	484	493	497	501
Junior high schools	40	40	45	46	49
High schools	19	20	15	17	14
Senior high schools	29	29	36	38	42
Total	570	573	589	598	606
NUMBER OF TEACHERS (a)					
Engaged in teaching duties	5,910	6,306	6,688	7,080	7,520
On special duties	121	121	131	139	157
On leave	110	70	99	73	90
Total	6,141	6,497	6,918	7,292	7,767
Males	3,072	3,164	3,278	3,457	3,775
Females	3,069	3,333	3,640	3,835	3,992
Total	6,141	6,497	6,918	7,292	7,767
NUMBER OF PUPILS (b)					
Grade of education—					
Primary	115,217	120,032	123,255	126,675	127,698
Secondary—Years 1, 2 and 3	39,246	41,209	43,424	44,886	46,092
Years 4 and 5	5,761	6,472	6,972	7,930	9,359
Ungraded pupils in special classes	522	482	373	398	390
Total	160,746	168,195	174,024	179,889	183,539
Males	84,613	88,487	91,698	94,644	96,496
Females	76,133	79,708	82,326	85,245	87,043
Total	160,746	168,195	174,024	179,889	183,539

(a) Excluding persons teaching part-time.
poundence School.

(b) Excludes part-time students enrolled in the Western Australian Correspondence School.

The figures shown under the heading 'On special duties' represent teachers engaged in activities associated with the Division of Special Services and the Special Branches of the Department.

Primary and Secondary Curriculum

In primary schools the subjects taught are English, mathematics, social studies, elementary science, physical education, handicrafts, music and art. The teaching of elementary science aims at a better understanding of the child's physical environment.

The course is adapted to the conditions of the particular neighbourhood, and so varies between town and country areas. In musical expression, choral singing receives most attention, although school orchestras are being developed in some primary and high schools. Advisory teachers, under the direction of specialist superintendents, assist teachers in the fields of handicrafts, physical education, art, music, speech, drama and elementary science.

At the post-primary level, every student is required to take instruction in English, mathematics, science, and social studies, as well as one or more subjects chosen from a range of optional subjects.

Education in the government schools is secular in character but periods are set aside during which representatives of various religious denominations attend to give religious instruction. In addition, instruction in scripture stories is given by class teachers.

Radio, Television and Film Aids

Extensive use is made of radio and films, most schools having radio receivers and many being equipped also with film projectors and sound-reproduction systems. The use of television is increasing, particularly in secondary schools, as an aid in the teaching of mathematics, science, literature, social studies and languages. The Australian Broadcasting Commission co-operates with the Education Department in providing suitable radio and television programmes and Parents and Citizens' Associations assist in supplying the necessary equipment. The Audio-Visual Education Branch of the Department provides a wide variety of audio-visual aids.

Student Counselling and Vocational Guidance

Guidance officers of the Division of Special Services are available to discuss with parents the most suitable courses of study for their children and vocational guidance is given to pupils leaving high school. In addition, cases of handicapped or educationally retarded children are investigated and appropriate courses of education recommended.

Special Schools and Classes

The Division of Special Services provides a variety of assistance for physically and mentally handicapped children. A Kindergarten and Infant School for Deaf Children is maintained, as well as a Deaf School for older pupils. Special classes are organised for the blind and for the mentally handicapped, and instruction is given to patients at the Princess Margaret Hospital for Children and at other hospitals. The Department co-operates with welfare organisations, such as the Spastic Welfare Association and the Slow Learning Children's Group, by making teachers available to them.

Correspondence Tuition

The Western Australian Correspondence School provides tuition by correspondence for children living in remote areas or unable to attend school for other reasons. The service extends also to post-primary students in the smaller country schools, to sick and invalid children, and to some adults in country areas. Adults enrol mainly in order to meet the training requirements for some occupations, or to improve their general education. At 1 August 1972, full-time students enrolled in the Correspondence School comprised 422 primary and 92 secondary students.

Schools of the Air are conducted through the radio network of the Royal Flying Doctor Service from bases at Carnarvon, Derby, Kalgoorlie, Meekatharra and Port Hedland to supplement tuition provided by the Correspondence School.

Education of Aborigines

Aboriginal and part-Aboriginal children are admitted to ordinary schools and are educated under the same conditions as other children. For schools with a preponderance of Aborigines, special attention is directed to the framing of courses of study suited to

the vocational needs of the older Aboriginal pupils. In August 1972 there were 6,221 Aboriginal and part-Aboriginal children at government primary schools and high schools and 1,097 at non-government schools.

Instruction for adult Aborigines is available under the Adult Aboriginal Education programme conducted by the Technical Education Division (see page 169).

Agricultural Education

Agricultural education is provided at certain high schools. Residential accommodation is available at the Narrogin Agricultural Senior High School, the Harvey Agricultural High School and the Agricultural Junior High Schools at Cunderdin and Denmark. Day instruction is provided by high schools at Esperance, Kojonup, Manjimup, Margaret River and Mount Barker. Preference is given to the sons of farmers but other suitably qualified boys, with the physical capacity for farm work, are admitted. The curriculum is designed as a continuation of general education to standards equivalent to those of other types of schools but with appropriate vocational emphasis. The aim is to produce young men capable of becoming leaders in rural communities as well as being successful farmers with an appreciation of the value of scientific methods in agriculture. Each school providing agricultural instruction has agricultural land attached to it.

Diploma and certificate courses in various aspects of agriculture are provided by the Technical Education Division by means of class tuition, or by correspondence through the Technical Extension Service.

In addition to the activities of the Education Department in the field of agricultural education, facilities are also provided by Muresk Agricultural College, a department of The Western Australian Institute of Technology (see letterpress on pages 171-4).

Technical Education

The Technical Education Division of the Education Department offers technician-level courses, apprenticeship and part-apprenticeship training, general studies programmes (including courses for students preparing for public and other external examinations), and adult education (including classes designed as leisure-type studies).

The Technical Education Division provides instruction in ten 'areas of study', namely Agriculture; Apprenticeships and Post-trade Courses; Art; Building and Architecture; Engineering (including Aeronautical); General Studies; Health and Psychology; Home Economics; Management, Business and Commercial Studies; and Mathematics and Science.

Institutions under the control of the Technical Education Division at 31 December 1972 comprised five technical colleges (Fremantle, Leederville, Mount Lawley, Perth, and the Technical Extension Service), six technical schools (Bunbury, Carlisle, Claremont, Eastern Goldfields, Midland and Wembley), ten technical centres with full-time officers in charge, and seventy-six technical centres with part-time officers in charge. The Division has a Counselling Service which is available to advise students in selecting a course, to assist them in their studies, and to provide consultant services to industry and commerce on staff selection and training.

Technician-level studies are usually designed as diploma or certificate courses, for which the minimum entry requirement is the satisfactory completion of three years of secondary education or its accepted equivalent. Although these courses were originally on the basis of part-time study, some of them are now also available by full-time study, and other part-time courses at these levels are being progressively redesigned on a full-time, or partially full-time, basis. This means that an increasing number of subjects in these courses are becoming available to part-time students who can obtain day release from their employers to attend classes. Diploma and certificate courses are conducted, wholly or partly, at technical colleges and schools, and subjects in the early stages of a number of courses are also available at some technical education centres.

Details of teaching positions and student enrolments in the five years 1968 to 1972 are given in the table on page 168.

TECHNICAL EDUCATION

Particulars	1968	1969	1970	1971	1972
COLLEGES (a)					
Number of—					
Colleges (b)	5	5	5	5	5
Teaching positions (c)—					
Full-time	340	383	419	441	440
Part-time	711	620	744	755	853
Student enrolments (d)	33,949	31,991	34,854	29,757	30,608
SCHOOLS					
Number of—					
Schools (b)	6	6	6	6	6
Teaching positions (c)—					
Full-time	149	168	191	201	188
Part-time	269	289	277	327	389
Student enrolments (d)	10,836	11,747	11,540	12,888	12,893
CENTRES					
Number of—					
Centres (b)	69	81	71	75	86
Teaching positions (c)—					
Full-time	18	20	32	21	24
Part-time	718	849	851	*883	953
Student enrolments (d)	16,829	21,613	20,618	21,443	24,162
OTHER SERVICES (e)					
Number of—					
Services (b)	3	3	3	3	3
Teaching positions (c)—					
Full-time	21	27	30	30	30
Part-time	124	96	244	244	162
Student enrolments (d)	2,386	3,487	3,243	5,417	6,563
TOTAL					
Number of—					
Colleges, schools, centres, and other services (b)	83	95	85	89	100
Teaching positions (c)—					
Full-time	528	598	672	693	682
Part-time	1,822	1,854	2,116	*2,209	2,357
Total	2,350	2,452	2,788	*2,902	3,039
Student enrolments (d)—					
Males	38,557	40,197	(f) 42,603	(f) 40,476	42,115
Females	25,443	28,641	(f) 27,652	(f) 29,029	32,111
Total	64,000	68,838	70,255	69,505	74,226

(a) Includes Technical Extension Service. (b) At 31 December. (c) At 1 July. A teacher may occupy teaching positions at more than one institution; the number of individual teachers is not available. (d) A student is counted once for each course undertaken during the year. (e) Adult Aboriginal Education Classes, Youth Educational Classes, Counselling Service, and teachers in administrative positions. (f) Estimated. A few small centres were unable to provide separate figures for males and females. * Revised.

Programmes of study are available for students wishing to undertake examinations organised by other examining bodies such as the Public Examinations Board (see page 178), The Royal Society of Health and a number of Australian Government and State Government Departments.

Vocational courses, including apprenticeship training, may be taken at colleges and schools close to Perth, at the Bunbury and Eastern Goldfields Technical Schools and at the Geraldton and Albany Technical Education Centres. In addition, there are many courses and subjects which help students to develop useful and interesting leisure-time activities.

The Technical Education Division has a number of evening technical centres in the metropolitan area and in country towns. These centres, which are located in government school buildings, offer those subjects for which there is sufficient local demand and for which suitable facilities and staff are available. The subjects provided fall into the categories of general education, including Public Examination and pre-diploma subjects, accounting, business studies and commercial subjects, and leisure-type activities.

The Technical Extension Service, through its correspondence courses, caters for a wide range of instruction for students who are unable to attend formal classes because of remoteness or individual limitations such as physical disability. In larger country centres, correspondence instruction is supplemented by the provision of study groups which students may attend for one period a week to do their correspondence work in the local school under the supervision of a teacher who is able to assist in interpretation of material and in the presentation of answers. The technical aspects of this instruction are the responsibility of specialist tutors employed in the Service.

The Technical Education Division collaborates with two Australian Government authorities, the Department of Immigration and the Department of Education, in providing courses in the English language for adult migrants. The Division conducts an Adult Aboriginal Education programme which, although designed mainly to develop literacy, also conducts classes in community obligations, home skills, employment skills and leisure-time activities.

NON-GOVERNMENT SCHOOLS

The non-government schools, which are conducted mainly by religious organisations, provide education from kindergarten to the end of the secondary school course, equivalent to the final year in the government high schools. The curriculum at the primary and secondary levels is substantially the same as that in the government schools.

Pre-school Education

KINDERGARTEN SCHOOLS (a)

Particulars	At 1 August—				
	1968	1969	1970	1971	1972
Number of schools (b) with—					
Less than 21 pupils	29	34	39	45	44
21–35 pupils	40	42	46	47	57
36–100 pupils	117	133	144	159	174
101–200 pupils .....	....	....	....	2	3
Total	186	209	229	253	278
Number of teachers—					
Trained	141	177	217	219	277
Untrained	179	188	242	258	326
Total	320	365	459	477	603
Number of pupils enrolled—					
Kindergarten schools (b)	7,989	9,191	10,201	11,632	13,291
Kindergarten grades in other non-government schools	329	245	386	432	388
Total	8,318	9,436	10,587	12,064	13,679

(a) Including schools affiliated with the Kindergarten Association of Western Australia, Incorporated.

(b) Kindergarten schools registered with the Education Department. Primary schools with kindergarten grades are excluded.

The *Pre-School Education Act, 1973*, which came into operation on 1 July 1973, establishes the Western Australian Pre-School Education Board. The Act authorises the dissolution of the Kindergarten Association of Western Australia, Incorporated, and the transfer to the Board of its property, rights, obligations, and liabilities. The Act provides

that every person conducting a pre-school education centre shall hold a permit issued by the Minister for Education, and that every authorised pre-school education centre shall be subject to inspection by an officer of the Education Department.

Schools, Teachers and Pupils

NON-GOVERNMENT SCHOOLS

Particulars	At 1 August—				
	1968	1969	1970	1971	1972
NUMBER OF SCHOOLS					
Primary and secondary—					
Church of England	9	9	8	9	10
Methodist	3	3	3	3	3
Presbyterian	2	2	2	2	2
Roman Catholic	171	168	168	169	165
Other denominations	10	10	10	10	10
Undenominational	4	4	5	7	7
Kindergarten (a)	186	209	229	253	278
Total	385	405	425	453	475
NUMBER OF TEACHERS (b)					
Primary and secondary—					
Church of England	228	236	260	259	266
Methodist	99	107	107	117	107
Presbyterian	79	81	91	99	102
Roman Catholic	945	976	1,005	1,082	1,115
Other denominations	43	44	45	48	48
Undenominational	8	12	12	19	21
Kindergarten (a)	*320	*365	459	*477	603
Total	*1,722	*1,821	1,979	*2,101	2,262
NUMBER OF PUPILS					
Primary and secondary—					
Church of England	3,970	4,103	4,138	4,123	4,220
Methodist	1,782	1,859	1,944	2,041	2,084
Presbyterian	1,393	1,455	1,503	1,579	1,586
Roman Catholic	32,861	33,088	33,700	33,520	33,504
Other denominations	972	953	967	1,062	1,125
Undenominational	7,579	8,786	9,893	11,420	13,070
Total	48,557	50,244	52,145	53,745	55,589
Grade of education—					
Kindergarten (a)	8,318	9,436	10,587	12,064	13,679
Primary	24,768	24,929	25,312	25,228	25,009
Secondary—Years 1, 2 and 3	11,822	11,972	12,272	12,268	12,380
Years 4 and 5	3,649	3,907	3,974	4,185	4,521
Total	48,557	50,244	52,145	53,745	55,589
Males	23,379	24,373	25,215	26,111	27,109
Females	25,178	25,871	26,930	27,634	28,480
Total	48,557	50,244	52,145	53,745	55,589

(a) For additional information see previous table.
* Revised.

(b) Excluding persons on leave without pay and persons teaching part-time.

TEACHER EDUCATION

The *Teacher Education Act, 1972*, which came into operation on 12 January 1973, establishes the Western Australian Teacher Education Authority, with the responsibility of providing teacher education, formerly a function of the Education Department. The Authority consists of a Council and constituent colleges. There are five such colleges, all of which are in the Perth metropolitan area. They are situated at Churchlands, Claremont, Graylands, Mount Lawley and Nedlands. The college at Nedlands is for the training of secondary school teachers.

Among the principal objects of the Authority are the co-ordination and improvement of teacher education, and the development of autonomy in each college both academically and in the control of its finances.

The basic course of teacher education is of three years' duration. The minimum requirement for entrance is a pass in English and three other subjects of the Leaving Examination, or its equivalent. Selected students may take extended courses of from three to six years' duration in special fields of study to obtain University degrees and/or other qualifications. There is also a one-year course open to University graduates and to associates of The Western Australian Institute of Technology.

At 1 August 1973 the total student enrolment (including 69 students on leave without pay) was 3,956, comprising Churchlands 424, Claremont 566, Graylands 465, Mount Lawley 737, and Nedlands 1,764.

TEACHERS COLLEGES

Particulars	1968	1969	1970	1971	1972
Number of—					
Lecturers (a)	109	133	154	187	223
Students enrolled (a)—					
Departmental (b)—					
Primary course	993	1,137	1,285	1,468	1,835
Secondary course	931	1,050	1,205	1,313	1,489
On study leave	49	43	63	62	70
Private (b)	41	40	46	83	131
Total	2,014	2,270	2,599	2,926	3,525
Students graduating—					
Departmental (b)	695	668	715	774	938
Private (b)	29	22	13	24	54
Total	724	690	728	798	992

(a) At 1 August. (b) 'Departmental' students are those who have entered into an agreement to serve with the Education Department for a specified period after completion of the course; 'private' students are those who have not entered into such an agreement.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY

The Western Australian Institute of Technology is a college of advanced education, established in terms of the *Western Australian Institute of Technology Act, 1966-1971* as an autonomous body under the control of a governing council. The main functions of the Institute, as set out in the Act, are to provide facilities for higher specialised instruction and to advance training in the various branches of technology and science; to aid the advancement, development and practical application to industry of science or any techniques; and to encourage and provide facilities for the development and improvement of tertiary education whether on a full or part-time basis to meet the needs of the community.

Buildings for the Institute were commenced in 1963 on a site of some 270 acres at Bentley, approximately seven miles from the Perth city centre, and the initial group of buildings was officially opened on 17 August 1966. The administration and associated buildings were officially opened on 11 October 1968.

The Institute conducts courses leading to a degree, an associateship or a diploma. The courses vary in duration, requiring either three years or four years of full-time study or the part-time equivalent. (In the case of Architecture the three-year full-time course is followed by two years' part-time study while in approved employment.) The normal entrance requirement is that a student shall have attained an aggregate of 270 or more on percentage marks obtained in English and four other subjects of the Leaving Examination, or shall have passed the qualifying examination (at Leaving standard) conducted by the Technical Education Division of the Education Department. In some courses a student over the age of twenty-three years without the normal entrance requirements may sit for an Institute Mature Age Examination to gain admission. Qualifications held by students entering from secondary schools in other States or countries, or from other institutions, are assessed prior to admission to courses.

The teaching work of the Institute is organised under five Schools, each of which comprises a number of Departments. The fields of study covered in 1974 include: *Department of Accounting*—Accounting; *Department of Architecture*—Architecture, Quantity Surveying, Town and Regional Planning; *Department of Art and Design*—Art, Art Teaching, Fine Art, Industrial Arts, Design; *Department of Biology*—Applied Biology; *Department of Chemistry*—Applied Chemistry, Applied Geology; *Department of Civil Engineering*—Civil Engineering; *Department of Computing and Data Processing*—Computing, Information Processing; *Department of Electrical Engineering*—Electrical Engineering, Electronic Engineering, Communications Engineering; *Department of English and Language Studies*—English, Language Studies, Asian Studies; *Department of Home Economics*—Home Economics, Nutrition; *Department of Library Studies*—Library Studies; *Department of Management*—Management, Educational Administration; *Department of Mathematics*—Mathematics; *Department of Mechanical Engineering*—Mechanical Engineering, Metallurgy; *Department of Medical Technology*—Medical Laboratory Technology, Dental Therapy, Environmental Health; *Department of Pharmacy*—Pharmacy; *Department of Physics*—Applied Physics, Geophysics, Diagnostic Radiography, Therapeutic Radiography; *Department of Psychology and Social Work*—Applied Psychology, Social Work; *Department of Secretarial Administration*—Secretarial Administration, Valuation; *Department of Social Sciences*—Social Science; *Department of Surveying*—Surveying; *Department of Therapy*—Occupational Therapy, Physiotherapy, Chiropractic.

In addition, there is a Department of External Studies which provides tuition in some of the courses leading to a degree, an associateship or a diploma.

The Institute conferred degrees for the first time in 1973. Degree courses are available in Applied Chemistry, Applied Geology, Applied Geophysics, Applied Physics, Business (with options in Accounting, Management, and Secretarial Administration), Communications Engineering, Electrical Engineering, Electronic Engineering, Medical Technology, Pharmacy, Social Science, Social Work, and Surveying.

On 1 January 1969 the Institute took over the administration and academic control of the Royal Perth Hospital School of Occupational Therapy, the School of Physiotherapy, the School of Mines of Western Australia and Muresk Agricultural College.

The Kindergarten Teachers College, formerly under the control and management of the Kindergarten Association of Western Australia, Incorporated, became incorporated with the Institute on 1 July 1973. It is the inaugural member of a School of Teacher Education to be built at the Institute by 1975.

School of Mines of Western Australia

The School of Mines of Western Australia was established at Coolgardie in 1902 and was transferred to Kalgoorlie in the following year. Control of the School of Mines, formerly part of the Department of Mines, passed to The Western Australian Institute of Technology in January 1969. The number of students enrolled in 1973 was 213.

Degree courses are available in Business (with options in Accounting, Management and Secretarial Administration), and Electrical Engineering. Associateship courses are available in Engineering (Civil, Mechanical, Mining), Metallurgy, and Mining Geology. These courses extend over three or four years of full-time study or the part-time equivalent. A diploma course in Mining Technology extending over two years of full-time study, or the part-time equivalent, is also provided.

Through the Kalgoorlie Metallurgical Laboratory, the School undertakes metallurgical investigations as well as assays for gold or for other metals. Free assays and mineral determinations are made available for *bona fide* prospectors.

The School has a geological museum which is open to the public and contains rocks and minerals from many parts of Australia and elsewhere.

Muresk Agricultural College

Muresk Agricultural College, situated eight miles south of Northam in the Avon valley, was established by the Department of Agriculture in 1926. Control of the College

was transferred to The Western Australian Institute of Technology from the Department of Agriculture in January 1969.

The College course, which is at tertiary level, leads to a Diploma in Agriculture. It is of two years' duration and is fully residential. The course is designed to give a sound scientific, technical and managerial training suitable for those wishing to become farm owners or managers, or to work in industries servicing agriculture. The subjects studied are Plant Sciences and Husbandry, Animal Sciences and Husbandry, Agricultural Engineering, Farm Management, Soil Science, Humanities and Practical Farm Work. Instruction is given by means of lectures, assignments, laboratory and workshop practical work, demonstrations, tutorials, day tours to farms and research stations, extended tours into the agricultural areas, and practical farming on the College estate.

The estate of 2,222 acres is devoted to mixed farming and provides the students with an opportunity to gain a considerable amount of practical experience by observation, demonstration and actual participation in a wide variety of farming activities. Use is made of the College facilities for various research projects. High quality stock from the College's herds and flocks is available to Western Australian farmers.

From time to time short courses are held at the College. These include in-service training schools for personnel of the Department of Agriculture and for field and service staff of agricultural firms.

The number of students enrolled at the College in 1973 was fifty-eight.

Finance

The following table relates to income and expenditure of The Western Australian Institute of Technology in each year from 1968 to 1972.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY—FINANCE
(\$'000)

Particulars	1968	1969	1970	1971	1972
INCOME					
Income for specific capital purposes (a)—					
Commonwealth Government grants	697	1,765	1,192	2,045	1,013
State Government grants	697	1,765	1,192	2,045	1,654
Total	1,394	3,530	2,384	4,090	2,667
Income for other purposes—					
Commonwealth Government grants	883	1,395	2,017	*2,676	3,184
State Government grants	1,485	2,233	3,203	*4,353	4,962
Donations and endowments	45	54	28	*25	25
Student fees (b)	153	289	529	635	1,092
Other	5	59	94	*594	480
Total	2,570	4,030	5,871	*8,283	9,743
TOTAL INCOME	3,964	7,560	8,255	*12,373	12,410
EXPENDITURE					
Salaries and wages	2,047	2,595	4,351	*5,972	7,097
Library	29	48	78	*123	137
Buildings, grounds and equipment	1,420	3,580	2,532	4,306	2,407
Minor equipment	62	94	211	*247	446
Sundry auxiliary expenditure	361	1,203	1,003	*1,482	2,232
TOTAL EXPENDITURE	3,918	7,520	8,175	*12,130	12,319

(a) Income received specifically for new buildings, major alterations and additions to buildings, installation of services, purchase of land and buildings and major equipment. (b) Excludes fees collected on behalf of student organisations. * Revised.

Teachers, Students and Awards Conferred

The following table gives particulars of teaching staff in each of the years 1968 to 1972. The number of associateships and diplomas conferred is also shown.

THE WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY

Particulars	1968	1969	1970	1971	1972
NUMBER OF TEACHING STAFF (a)					
Full-time—					
School and department heads	13	16	21	21	22
Senior lecturers	31	37	49	63	71
Lecturers	133	149	171	194	219
Assistant lecturers, tutors, demonstrators, etc.	75	101	114	158	187
Total, Full-time	252	303	355	436	499
Part-time (b)—					
Teaching staff	21	35	32	36	59
Supporting staff	2	4	7	7	2
STUDENT ENROLMENTS (c)					
Full-time	1,558	1,680	1,824	2,202	2,877
Part-time	1,931	2,565	3,112	3,498	3,591
Correspondence	223	334	463	608	750
Total	3,712	4,579	5,399	6,308	7,218
Males	3,119	3,776	4,476	5,113	5,612
Females	593	803	923	1,195	1,606
Total	3,712	4,579	5,399	6,308	7,218
ASSOCIATESHIPS AND DIPLOMAS CONFERRED					
School or department—					
Accounting and business studies	17	13	32	49	58
Administrative studies	31	31	30	48	37
Agriculture	....	17	30	15	14
Architecture	41	21	16	44	41
Art and design	7	13	23	42	43
Chemistry	17	14	23	30	15
Engineering—					
Civil	25	31	40	37	42
Electrical	16	16	24	26	36
Mechanical	10	16	17	22	18
Home economics	16	18	22	26	22
Mathematics	1	5	5	7	8
Medical technology	....	....	21	33	21
Mines	....	7	19	21	14
Pharmacy	29	46	28	25	35
Physics	19	22	16	16	17
Surveying	....	....	19	19	14
Therapy	....	31	30	25	39
General studies	25	29	38	62	48
Total	254	330	433	547	522
Males	226	260	343	422	395
Females	28	70	90	125	127
Total	254	330	433	547	522

(a) At 30 June. (b) Expressed on the basis of full-time staff equivalents. (c) A student is counted once for each course undertaken during the year. Figures for 1968 are at 30 June; for 1969 at 30 September; for 1970 at 30 April; for 1971 at 23 December; and for 1972 at 30 April.

THE UNIVERSITY OF WESTERN AUSTRALIA

University education first became available in Western Australia in 1898, with the formation of the Extension Committee of the University of Adelaide by which facilities were provided for external studies in courses for degrees in Arts and Science. The first step towards the establishment of a university in Western Australia was taken in 1904, when a University Endowment Act providing for the incorporation of a trust to administer funds for the purpose was passed by the State Parliament. Following a favourable report made by a Royal Commission under the chairmanship of Dr (later Sir Winthrop) J. W. Hackett, the University was established by the University of Western Australia Act of 1911. Teaching began in 1913 in subjects related to the Faculties of Arts, Science and Engineering. Additional Faculties established since that time are those of Law (1927), Agriculture

(1936), Dental Science (1946), Education (1947), Economics (1954), Medicine (1956) and Architecture (1966). The Faculty of Economics was reconstituted as the Faculty of Economics and Commerce in 1961.

Matriculation Requirements

A student wishing to matriculate at the University must pass the Leaving Examination in five subjects from specified groups at leaving level, and at matriculation level in three of the subjects taken at leaving level, provided that one of these eight passes shall be in English or English Literature. The matriculation level examinations require a student 'to give more evidence of ability and experience in study in depth'. A candidate must pass all these examinations in the same year, or pass all the leaving level examinations in one year and the matriculation level examinations in the following year. A part-time student is allowed up to three consecutive years to complete the requirements.

Matriculant status may be granted to an applicant who has satisfied the examination requirements of another university in Australia, New Zealand or the United Kingdom, or of any other university recognised by the University of Western Australia, qualifying him for matriculation.

The regulations provide for a Mature Age Examination enabling the provisional admission to some University courses of persons over the age of twenty-one years who have not otherwise qualified for matriculation. Candidates take certain papers in the Leaving Examination as follows : English at leaving level ; one other subject selected from a specified list at both leaving and matriculation levels. A pass in the Mature Age Examination is recognised as qualifying for provisional admission to the Faculty of Arts (for Bachelor of Arts and Bachelor of Psychology degree courses) and to the Faculties of Education, and Economics and Commerce. Full matriculation status is granted on successful completion of the first academic year, *i.e.* a pass in four first-year units of the course of study.

Provision is made for admission to some Faculties of persons holding certain certificates or diplomas or other specified qualifications.

Degrees

Degrees are granted in the Faculties of Arts, Law, Education, Economics and Commerce, Science, Engineering, Agriculture, Dental Science, Medicine and Architecture.

Courses for the degrees of Bachelor of Arts, Bachelor of Economics, Bachelor of Commerce and Bachelor of Science extend over a period of not less than three years; those for the degrees of Bachelor of Music, Bachelor of Psychology, Bachelor of Education, Bachelor of Engineering, Bachelor of Science in Agriculture and Bachelor of Science Education, over not less than four years; and those for the degrees of Bachelor of Dental Science and Bachelor of Architecture over not less than five years. The course for the degree of Bachelor of Jurisprudence extends over a period of not less than three years, following successful completion of the first year of a course in any faculty other than the Faculty of Law, and that for the degree of Bachelor of Laws over a period of not less than four years, following successful completion of the first year of a course in any faculty other than the Faculty of Law. Honours degree courses in Arts, Music, Psychology, Economics, Education, Commerce and Science are usually of four years' duration. The course in the Faculty of Medicine for the degrees of Bachelor of Medicine and Bachelor of Surgery extends over six years, and that for the degree of Bachelor of Medical Science over four years or five years according to the subjects taken. The degrees of Master of Arts and Doctor of Letters, Master of Music and Doctor of Music, Master of Psychology, Master of Laws and Doctor of Laws, Master of Education, Master of Economics, Master of Commerce, Master of Science and Doctor of Science, Master of Engineering Science, Master of Engineering and Doctor of Engineering, Master of Science in Agriculture and Doctor of Science in Agriculture, Master of Dental Science and Doctor of Dental Science, Master of Surgery and Doctor of Medicine, Master of Architecture, Master of Building Science and Master of Social Work are conferred by the University. The degree of Doctor of Philosophy is also given for research in all Faculties.

Diplomas

There are two post-graduate courses leading to a diploma. These are the Diploma in Education and the Diploma in Computation. The Diploma in Social Work (see table on page 178) is no longer awarded. The course for the Diploma in Numerical Analysis and Automatic Computing was reorganised in 1969 and the name of the award changed to Diploma in Computation.

University Government

The original Act provided that the Senate and Convocation should constitute the governing authority with power to make statutes for 'the management, good government and discipline of the University'.

The Senate consists of twenty-five members, of whom six are appointed by the Governor, six are elected by Convocation, four are elected by the full-time teaching staff, two are elected by students, three are *ex officio* members (the Vice-Chancellor of the University, the Director-General of Education and the President of the Guild of Undergraduates), and four are co-opted members. Convocation consists of graduates of the University and such other persons as are eligible for membership under the provisions of the University of Western Australia Act.

Since an amendment to the Act in 1944 the Senate alone has been the governing authority and is responsible, subject to the Act and the statutes, for the entire control and management of the University. Statutes originate in the Senate and are submitted to Convocation for its consideration, and although Convocation may suggest amendments the Senate is not bound to accept them. The Act requires that statutes shall be submitted to the Governor for approval, after which they have the force of law.

The Chancellor is the titular head of the University. He is elected annually by the Senate from among its members and presides over its meetings. The Vice-Chancellor is the chief executive officer of the University and is appointed by the Senate for a period not exceeding ten years, at the end of which term he is eligible for reappointment. At meetings of Convocation the chairman is the Warden who is elected annually by Convocation from among its members.

The Guild of Undergraduates is constituted under the Act as an association of undergraduates 'for furthering of their common interests, and shall be the recognised means of communication between the undergraduates and the governing authority of the University'. The government of the student body is vested in the Guild Council, to which members are elected in accordance with regulations made by the Guild.

Student Fees, Allowances and Scholarships

The Royal Commission appointed to inquire into the establishment of a University recommended that teaching should be free and suggested that 'if fees are found to be necessary, they should be on the lowest possible scale'. This policy was adopted and tuition fees were not charged, except in the case of a limited number of students, until 1962 when fees were introduced to assist in meeting the increasing costs of operation resulting from a rapidly growing student enrolment and to enable the University to take full advantage of financial aid available under Commonwealth legislation (see page 181). The Australian Government assumed full financial responsibility for tertiary education with effect from 1 January 1974 and tuition fees were abolished. However, students are still required to pay Guild of Undergraduates and faculty society subscriptions, membership being compulsory for students enrolled in a course for a bachelor's degree or a diploma, or for one or more units of study.

Financial assistance is given to students by the Australian Government in the form of tertiary education allowances and post-graduate awards, to which reference is made on pages 182-3.

The University makes awards, from its own funds, of research studentships for post-graduate study which are competed for by students holding no other award and having an Honours degree of second class (Division A), or higher, standard. Hackett Scholarships,

tenable at the University of Western Australia or in special circumstances at other recognised institutions in Australia, are open to graduates of the University. Graduates may also apply for Hackett Studentships which, in addition to other financial benefits, may carry a travel grant where the Student elects to study overseas or in another State. Some large private industrial concerns also make annual awards for study at post-graduate level.

Tuition

In addition to the normal lectures and tutorials for full-time students, courses for part-time students are offered in the Faculties of Arts, Education, and Economics and Commerce. Certain subjects may be taken at institutions affiliated with the University. These are The Western Australian Institute of Technology, the Secondary Teachers College, Claremont Teachers College, Graylands Teachers College and Mount Lawley Teachers College.

Residents of Western Australia living outside the metropolitan area are able to enrol as external students, for a limited range of subjects, in the Faculties of Arts, Education, and Economics and Commerce.

Finance

The following table relates to the income and expenditure of the University of Western Australia in each year from 1968 to 1972. Information in greater detail is available in the publication *University Statistics: Part 3—Finance*, issued annually by the Commonwealth Statistician, Canberra.

UNIVERSITY OF WESTERN AUSTRALIA—FINANCE (\$'000)

Particulars	1968	1969	1970	1971	1972
INCOME					
Income for specific capital purposes (a)—					
Australian Government grants	509	457	1,659	714	1,921
State Government grants	509	1,850	475	1,463	2,392
Total	1,018	2,307	2,134	2,177	4,313
Income for other purposes—					
Australian Government grants	3,386	3,467	4,242	4,885	5,437
State Government grants	3,842	4,022	4,784	6,024	5,864
Donations and endowments	865	936	1,068	1,103	1,179
Student fees (b)	1,423	1,658	2,145	2,293	3,447
Other	852	885	1,023	1,091	1,158
Total	10,368	10,968	13,262	15,396	17,085
TOTAL INCOME	11,386	13,276	15,396	17,573	21,398
EXPENDITURE					
Teaching and research	6,693	7,184	8,849	10,468	11,317
Administration and general overhead	806	881	1,154	1,341	1,591
Libraries	480	554	663	829	988
Buildings, premises, grounds	2,098	2,121	2,653	3,207	5,959
Sundry auxiliary expenditure	992	1,007	1,034	1,381	1,271
TOTAL EXPENDITURE	11,069	11,747	14,353	17,227	21,126

(a) Income received specifically for new buildings, major alterations and additions to buildings, installation of services, purchase of land and buildings and major equipment.

(b) Excludes fees collected on behalf of student organisations.

Teachers, Students, Degrees Conferred and Diplomas Granted

The following table gives particulars of teaching staff and students in each of the years from 1968 to 1972. The numbers of degrees conferred and diplomas granted during each of these years are also shown. Information in greater detail is available from the publications *University Statistics: Part 1—Students and Degrees Conferred* and *Part 2—Staff and Libraries*, which are issued annually by the Commonwealth Statistician, Canberra.

UNIVERSITY OF WESTERN AUSTRALIA

Particulars	1968	1969	1970	1971	1972
NUMBER OF TEACHING STAFF (a)					
Full-time—					
Professors	53	54	54	60	55
Associate professors, readers	45	49	50	51	59
Senior lecturers	122	130	142	143	146
Lecturers	115	112	118	136	131
Assistant lecturers, tutors, demonstrators	68	84	91	105	116
Total, Full-time	403	429	455	495	507
Part-time (b)—					
Lecturing	32	22	25	27	28
Demonstrating, tutoring	468	490	505	523	542
Adult education classes	57	40	40	42	3
NUMBER OF STUDENTS (a)					
Internal, full-time	4,079	4,407	4,966	5,288	5,551
Internal, part-time	2,178	2,430	2,464	2,692	2,759
External	310	314	352	375	343
Total	6,567	7,151	7,782	8,355	8,653
Males	4,732	5,065	5,373	5,603	5,761
Females	1,835	2,086	2,409	2,752	2,892
Total	6,567	7,151	7,782	8,355	8,653
DEGREES CONFERRED AND DIPLOMAS GRANTED					
Degrees conferred (c)—					
Agriculture	31	20	42	43	43
Architecture ....	....	8	12	15	20
Arts	262	282	295	325	370
Commerce	31	41	50	35	72
Dental Science	9	22	14	19	26
Economics	32	44	61	60	73
Education	43	31	41	45	77
Engineering	41	95	66	79	91
Law	23	38	37	29	44
Medicine	45	53	53	55	53
Music	2	1	3	7	1
Psychology	7	24	26	21	23
Science	179	204	214	262	234
Social Work ....	....	....	....	....	6
Total	705	863	914	995	1,133
Diplomas granted (d)—					
Education	102	102	96	147	201
Social Work	6	9	9	12	11
Numerical Analysis and Automatic Computing	5	5	....	....	....
Computation ....	....	....	5	10	15
Total	113	116	110	169	227

(a) Figures shown for 1968 and 1969 are as at 30 June; those for later years are as at 30 April. (b) Figures represent units of 100 hours of teaching time per annum. (c) Excluding honorary degrees. (d) See page 176.

Colleges and Hall of Residence

There are five residential colleges within the University. For men students, Saint George's College is conducted by the Church of England, Saint Thomas More College by the Roman Catholic Church and Kingswood College by the Methodist Church. Saint Catherine's College is an undenominational college for women students. Saint Columba College, for both men and women students, is a joint foundation of the Congregational and Presbyterian Churches.

Currie Hall is an undenominational hall of residence for men and women students.

Public Examinations Board

The Public Examinations Board, which is comprised of representatives of the University, the Education Department, and the non-government secondary schools, is constituted by University statute for the purpose of conducting the Junior and Leaving Examinations.

The Junior Examination has been almost entirely superseded by a schools assessment system. In 1974 only two schools will present candidates for the Junior Examination. The Leaving Examination is the final examination in the Western Australian secondary education system.

Extension Service

The Adult Education and Extension Committee was established by the Senate of the University in 1968 as a result of the reorganisation of the former Adult Education Board which had been created by the University in 1928. In 1972 the Committee was renamed the Extension Committee and more emphasis is now placed on University extension activities. The policies of the Committee are implemented by the Director of the Extension Service. The headquarters of the organisation are at the University.

The Extension Service is responsible mainly for post-graduate and refresher courses as well as certain cultural activities. It works in close liaison with University departments and faculties. The Extension Service is engaged principally in conducting conferences, symposia and seminars. Members of its staff are also involved during the summer months in work connected with the annual Festival of Perth.

Adult Education classes are conducted at city premises in Perth as well as at the University, and various activities in the metropolitan and country areas are arranged. These are generally non-vocational in character. During the year several series of classes, lectures and discussions are conducted, and a Summer School is held at the University each year.

MURDOCH UNIVERSITY

Murdoch University is established under the provisions of the *Murdoch University Act, 1973*, which came into operation on 1 July 1973. The University is named in honour of the distinguished Australian essayist and biographer, Sir Walter Murdoch (1874-1970), foundation Professor of English at the University of Western Australia (1912-1939) and later Chancellor (1943-1948).

Admissions. The University will open in 1975 with about 600 undergraduate and post-graduate students. There is to be a flexible policy concerning admissions. In determining the eligibility of a prospective student, consideration will be given to information obtained from school reports, the results of selection tests, interviews with applicants, and examination results.

Schools of Study. The University is organised on the basis of schools of study which have both academic and administrative responsibilities. The following initial schools have been established: Education; Environmental and Life Sciences; Human Communication; Mathematical and Physical Sciences; Social Inquiry; and Veterinary Studies.

Degrees. The University will award the degrees of Bachelor of Arts, Bachelor of Education, Bachelor of Science, Bachelor of Veterinary Medicine and Surgery, Master of Arts, Master of Education, Master of Science, Master of Veterinary Studies, Master of Philosophy, Doctor of Literature, Doctor of Science, Doctor of Veterinary Science, and Doctor of Philosophy.

Courses for the degree of bachelor are of the following duration: for the ordinary degree of Bachelor of Arts or Bachelor of Science three years, and for the corresponding honours degree four years; for Bachelor of Education four years; and for Bachelor of Veterinary Medicine and Surgery five years.

External Studies. Special provision is to be made for external students, and it is expected that a substantial and innovative programme of external studies will be developed during the 1976-1978 triennium. External tuition will be the responsibility of staff of the schools of study, but the external studies programme as a whole will be co-ordinated by a Director of External Studies.

University Government. The governing body of the University is the Senate. The Act provides that the Senate shall consist of: the Chancellor; the Vice-Chancellor; the Director-General of Education; the President of the Guild of Students of Murdoch University; three persons elected by and from among the members of the full-time academic staff; two persons elected by and from among the students; two Members of Parliament; nine other persons from specified categories; and in addition such persons, up to three in number, as may be co-opted to serve as members of the Senate by an absolute majority of the other members. The Act provides further that the Senate shall establish an Academic Council, the functions of which shall include the submission to the Senate of recommendations on academic policy, the admission of students, instruction, studies, examinations, research, and the discipline of the University, as well as the furnishing to the Senate of reports on all matters referred to it by the Senate for consideration. The Act requires that the Guild of Students of Murdoch University shall be established not later than 1 September 1976, and that Convocation shall be constituted on 1 July 1980.

Development of Site. The University site comprises some 600 acres of undulating land south of the Swan River about eight miles from the Perth city centre and five miles from Fremantle. An area of approximately 430 acres was formerly part of the Somerville Pine Plantation and was given to the University by the University of Western Australia.

The major buildings to be erected during the first triennium are the first stage of the veterinary school and four main buildings which are grouped around an open court in an elevated position in the northern part of the site. These buildings comprise a science laboratory block, a lecture theatre and library building, another teaching building and an amenities building for staff and students. Twenty acres have been cleared for playing fields in the south-west part of the site, and eighty acres in the south-east are being developed as a veterinary farm and holding area.

STATE GOVERNMENT EXPENDITURE ON EDUCATION

The following table shows the amounts expended on education from State Government funds during the five-year period ended 30 June 1972.

Payments from the Consolidated Revenue Fund relate to recurrent expenditure on such items as departmental administration, teachers' salaries, transport of school children, scholarships and allowances, maintenance of buildings, assistance to private schools, and grants to the University of Western Australia.

Expenditure from the General Loan Fund is principally on capital works which include buildings at The Western Australian Institute of Technology, primary schools, high schools and technical schools. Purchases of furniture and equipment are also included.

STATE GOVERNMENT EXPENDITURE ON EDUCATION (\$'000)

Classification	1967-68	1968-69	1969-70	1970-71	1971-72
CONSOLIDATED REVENUE FUND					
Administration and general	1,383	1,461	1,879	2,401	3,202
Primary	19,814	22,087	26,441	32,730	36,904
Secondary	12,055	14,314	18,229	24,410	29,153
Technical	5,933	7,094	8,655	11,241	13,222
Agricultural	406	417	135	105	111
University	4,038	4,095	5,065	5,589	6,504
Training of teachers	2,901	3,565	4,698	6,131	7,420
Transport of school children	3,156	3,299	3,547	3,666	4,099
Other	37	20	14	59	61
Total	49,722	56,352	68,664	86,333	100,677

STATE GOVERNMENT EXPENDITURE ON EDUCATION—*continued*
(\$'000)

Classification	1967-68	1968-69	1969-70	1970-71	1971-72
GENERAL LOAN FUND					
Primary	3,946	5,713	6,968	6,047	5,699
Secondary	3,447	2,883	3,165	3,480	4,371
Technical	1,526	1,041	1,270	1,588	1,730
Agricultural	25	13			
University	266	466	1,182	866	778
Training of teachers ....	...	8	470	1,468	1,496
Other	580	508	741	582	117
Total ...	9,791	10,632	13,796	14,032	14,191

Financial Assistance for Schools and Students

The State Government provides financial aid to non-government schools by a system of direct annual grants. The value of these grants is determined by the number of primary and secondary enrolments. The *Education Act, 1928-1973* authorises payment of grants during the five-year period commencing 1 January 1973 at a rate of not less than \$30 per annum in respect of each scholar enrolled in a course of primary education and not less than \$40 per annum in respect of each scholar enrolled in a course of secondary education.

Annual grants are made to non-government schools to enable the purchase of equipment, instruments and appliances. Subsidies are provided for the installation of swimming pools, and assistance is given by way of reimbursement of interest paid, up to a prescribed maximum rate, on moneys borrowed since 1 January 1965 for expenditure on new residential accommodation for scholars.

The State Government each year awards to country students 150 scholarships, valued at \$81 per annum, tenable for the first three years of secondary education at a government or non-government school. (These amounts are additional to the boarding allowances which are paid by the Australian Government to students who are obliged to live away from home to attend school; see letterpress *Isolated Children* on pages 183-4.)

Text books are issued free of charge to primary school children. An annual text book subsidy of \$5 is paid in respect of each student in the first, second and third year of secondary education, and \$15 in the fourth and fifth year.

All these forms of assistance to students are granted without the application of a means test.

AUSTRALIAN GOVERNMENT ASSISTANCE FOR EDUCATION

Although education is primarily the responsibility of the States, the Australian Government provides moneys for the financing of educational institutions and the assistance of students.

Finance for Institutions

Grants to the States for education began with contributions towards the recurrent expenditures of universities in 1951-52. Since that year, the Australian Government has increased its commitments to include: capital expenditures of universities (from 1957-58); technical training and science laboratories (from 1964-65); colleges of advanced education (from 1965-66); teachers colleges (from 1967-68); pre-school teachers colleges (from 1968-69); secondary school libraries (from 1968-69); recurrent grants for non-government schools (from 1969-70); capital grants for government schools (from 1971-72); recurrent grants for government schools (from 1973-74); and capital grants for non-government schools (from 1973-74). Some account of the legislation authorising payment of grants by the Australian Government appears in the *Western Australian Year Book*, No. 12-1973 (pages 182-4) and earlier issues. Details of amounts paid by the Australian Government in respect of Western Australia during the five-year period ended 30 June 1973 are given in the following table.

**AUSTRALIAN GOVERNMENT ASSISTANCE FOR EDUCATION
WESTERN AUSTRALIA
(\$'000)**

Nature of assistance	1968-69	1969-70	1970-71	1971-72	1972-73
Assistance of a revenue nature—					
Aboriginal advancement .....	.....	10	26	26	193
Colleges of advanced education	912	1,929	2,333	2,920	4,015
Independent (i.e. non-government) schools .....	.....	862	1,682	2,064	2,903
Research grants	276	323	296	307	370
Universities	2,833	3,281	3,900	4,594	5,683
Total	4,021	6,405	8,237	9,911	13,164
Assistance of a capital nature—					
Aboriginal advancement	203	160	250	290	425
Colleges of advanced education	874	1,050	1,903	1,899	1,689
Government schools .....	.....	.....	.....	620	1,242
Pre-school teachers colleges	14	161	.....	.....	.....
School libraries	168	596	779	765	864
Science laboratories in schools	921	921	921	911	911
Teachers colleges	582	201	3	1,132	1,865
Technical training	437	957	804	747	1,166
Universities	734	2,048	384	1,571	2,531
Total	3,933	6,094	5,044	7,935	10,693
GRAND TOTAL	7,954	12,499	13,281	17,846	23,857

An offer by the Australian Government to assume full financial responsibility for tertiary education from 1 January 1974 was accepted by the States at the Premiers' Conference in June 1973. (At the same time it was agreed that appropriate offsets would be made in the general purpose funds provided by the Australian Government to the States.)

Until December 1973, the Australian Government continued to make grants to the States for universities, colleges of advanced education, teachers colleges and pre-school teachers colleges on the basis of the existing 'matching' arrangements with the States. These arrangements provided for grants for recurrent expenditure to be made by the Australian Government on the basis of \$1 for each \$1.85 of State grants and student fees combined. Grants for capital expenditure were made on a \$1 for \$1 basis with moneys spent by the States for this purpose.

The inclusion of teachers colleges and pre-school teachers colleges in the arrangements for other tertiary institutions resulted from a decision that assistance would be provided to these colleges from 1 July 1973 on the same basis as to universities and colleges of advanced education. Previously, assistance had been granted for teachers colleges and pre-school teachers colleges under the States Grants (Teachers Colleges) Acts of 1967 and 1970 and the *States Grants (Pre-school Teachers Colleges) Act 1968-1972*. Grants under these Acts were provided to the States for constructional work and equipping of teachers colleges and to expand the capacity of pre-school teachers colleges. Grants for teachers colleges under these arrangements ceased on 30 June 1973 and those for pre-school teachers colleges at the end of 1973.

Assistance for Students

Concurrently with the Australian Government's assuming full financial responsibility for tertiary education with effect from 1 January 1974, tuition and related fees in universities, colleges of advanced education, teachers colleges and technical colleges were abolished.

Tertiary Education Allowances. A new system of tertiary and post-secondary allowances came into operation at the beginning of 1974 to replace the University Scholarship, Advanced Education Scholarship, and Technical Scholarship Schemes (see *Western Australian Year Book*, No. 12-1973, page 182). Under this system any full-time Australian student enrolled in an approved course at a university, college of advanced education, teachers college, technical college or agricultural college may apply for a living allowance subject to a means test. The maximum rates payable are \$850 per annum for students living at home and \$1,400 per annum for students living away from home.

Students who qualify for the payment of a living allowance are entitled to two other types of benefit, an incidentals allowance and a travel allowance. The incidentals allowance is designed to assist students in meeting the cost of fees such as student representative council, union and sports fees. Eligible students attending universities receive an incidentals allowance of \$100 per annum, those at colleges of advanced education \$70 per annum, and technical college students \$30 per annum. The travel allowance entitles students living away from the normal place of residence in order to undertake a course of study to be reimbursed for the cost of three return journeys per annum between their homes and the institution at which they are enrolled.

Aboriginal Study Grants Scheme. The Aboriginal Study Grants Scheme provides assistance to Aboriginal students taking courses at universities, teachers colleges and technical, business and agricultural colleges. The allowances payable under this scheme were increased from the beginning of 1974 in line with the increased allowances approved under the tertiary and technical students assistance schemes.

Post-graduate Awards. Holders of post-graduate awards are paid allowances to assist them to undertake research or to pursue an advanced course of study. These comprise: a living allowance of \$3,050 per annum; an establishment allowance of \$75 for an unmarried student or \$150 for a married student; a thesis allowance of \$150 for a Master's thesis or \$250 for a Ph.D. thesis; and an incidentals allowance of \$100 per annum to assist in meeting the cost of fees such as student representative council, union and sports fees.

Awards entitling the holder to substantially the same benefits were first made available in 1974 for students pursuing an approved Master's degree course at a college of advanced education.

Secondary Education. The Senior Secondary Scholarships Scheme provides awards tenable during the final two years of secondary education at government and non-government schools. Awards are made annually on a competitive basis, the number granted throughout Australia being 25,000, of which 2,000 are available to Western Australian students. Benefits comprise a basic allowance of \$150 per annum free of means test and an additional allowance, subject to a means test, up to a maximum of \$250 per annum.

A Secondary Allowances Scheme came into operation at the beginning of 1974 to assist families with limited financial resources to maintain their children at school for the final two years of secondary education. Benefits are subject to a means test. The maximum value of the allowance is \$304 per annum.

Aboriginal Secondary Grants Scheme. Under the Aboriginal Secondary Grants Scheme assistance is provided to encourage Aboriginal children attending secondary schools to stay beyond the normal school leaving age. In 1973 the scope of the scheme was extended to include all Aboriginal children attending secondary schools and classes; it had previously been generally restricted to Aboriginal children who continued their schooling beyond the school leaving age. Benefits include either assistance with boarding costs or a living allowance, and a contribution towards fees and expenditure on books, uniforms and other items.

Migrant Children. The *Immigration (Education) Act 1971* provides for special instruction to assist migrant children who have English language difficulties to achieve a sufficient command of English to enable them to participate fully in normal classes. Funds are provided to government and non-government school authorities to purchase special language teaching equipment and to pay the salaries of special teachers.

Soldiers' Children Education Scheme. The *Repatriation Act 1920-1973* provides assistance for the education and training of children of ex-servicemen who have died as a result of war service, or are either totally and permanently incapacitated or blind. The allowances paid cover expenditure on fees, books, equipment, fares and other items.

Isolated Children. A scheme of allowances was introduced from the beginning of the 1973 school year to assist in the education of children who, because of their geographic isolation, are without reasonable daily access to a government school providing courses at the appro-

priate level. Benefits payable in respect of children living away from home to attend school comprise: a boarding allowance of \$350 per annum free of means test; a further amount of \$350 per annum subject to a means test; and a special supplementary allowance up to a maximum of \$304 per annum in cases of particular hardship. For isolated children who study at home by correspondence there is an allowance free of means test. The allowance comprises a basic grant of \$200 per annum with provision for reimbursement of up to \$150 per annum for expenditure on certain specified items.

THE WESTERN AUSTRALIAN TERTIARY EDUCATION COMMISSION

A Committee was appointed by the Western Australian Government in August 1966 to investigate the future needs of Western Australia in relation to tertiary education, the institutions necessary to meet those needs, the appropriate form of control and government of tertiary institutions, and the future role and development of these institutions. The Committee published its recommendations in September 1967.

As a result of these recommendations a Tertiary Education Commission was formed in February 1969 as a standing advisory commission. Subsequently the *Western Australian Tertiary Education Commission Act, 1970*, which came into operation on 23 April 1971, established the Commission as a statutory corporate body.

The *Western Australian Tertiary Education Commission Act, 1970-1972* provides that the Commission shall consist of ten members, comprising a Chairman appointed by the Governor on the recommendation of the Minister; the Director-General of Education; the Under Treasurer of the State; the chief executive officers of the University of Western Australia, Murdoch University, The Western Australian Institute of Technology, and the Western Australian Teacher Education Authority; and three persons appointed by the Governor on the recommendation of the Minister.

The principal functions of the Commission are to promote, develop and co-ordinate tertiary education, having regard to the needs of the State and the financial and other resources available to it; to consider and make recommendations on the future development of tertiary education institutions (including the acquisition and reservation of sites), the levels of financial support requested by such institutions, the terms and conditions of appointment and employment of staff, the fees to be charged by each institution, and proposals for the establishment of new tertiary education courses; to co-ordinate the criteria for entrance to tertiary education institutions; and to determine the minimum requirements for new academic awards.

The Act also provides that the Commission shall confer and collaborate on matters relevant to tertiary education with Australian Government and State Government Departments, the Australian Universities Commission, the Australian Commission on Advanced Education and other governmental bodies and instrumentalities.

Chapter V—continued

Part 2—Arts, Science and Recreation

PUBLIC LIBRARIES

The Library Board of Western Australia

The Library Board of Western Australia, which is constituted under the provisions of the *Library Board of Western Australia Act, 1951-1965*, is responsible for all forms of public library services which are financed either wholly or in part from State funds. The Board consists of twelve members. The Director-General of Education is an *ex officio* member. Of the remaining eleven members, who are appointed by the Governor, five represent local government interests, five are nominated by the Minister for Education and one by the Library Association of Australia, Western Australian Branch.

The Board was set up as an independent statutory body in 1952. Its functions are to encourage and assist local authorities to establish public libraries and to co-ordinate those libraries into a State-wide system, to administer funds made available by the Government for this purpose, to provide for the training of librarians and library assistants and to advise the Minister and participating bodies on matters of general policy relating to libraries. Under the provisions of the *Acts Amendment (Libraries) Act, 1955*, the administration of the Public Library of Western Australia was transferred to the Board on 1 December 1955 and its name changed to The State Library of Western Australia.

THE LIBRARY BOARD OF WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure—					
Salaries and wages	\$ 305,595	353,303	440,417	560,588	616,071
Books, periodicals and binding	\$ 416,065	484,201	543,291	583,517	715,016
Other	\$ 67,359	110,863	118,310	127,747	119,819
Total	\$ 789,019	948,367	1,102,018	1,271,852	1,450,906
Number of—					
Full-time staff (a)—					
Qualified librarians	25	22	31	33	36
Student librarians and cadets	25	20	23	17	16
Other	58	75	77	89	92
Total	108	117	131	139	144
Associated public libraries (a)—					
Perth Statistical Division	27	27	29	33	34
Other Statistical Divisions	98	99	104	106	107
Total	125	126	133	139	141
Books—					
Reference library stock—					
Bound volumes (a)	242,664	249,612	254,223	259,243	266,368
Periodical and serial titles received	7,787	8,143	8,289	8,397	8,784
Circulation library stock—					
Books processed for circulation	103,276	102,366	111,927	108,861	135,779
Net additions to stock	57,204	46,054	51,478	44,371	60,971
Stock at 30 June	657,149	703,203	754,681	799,052	860,023
Received and dispatched in the exchange programme with local libraries	270,862	298,322	310,020	330,416	365,570
Inter-library requests received	55,441	61,047	62,880	73,229	76,493
Central Music Library stock (a) —					
Number of—					
Books	3,900	4,175	4,386	4,656	5,016
Musical scores	11,999	12,731	13,239	13,725	14,142

(a) At 30 June.

The books in all public libraries in the State are supplied by the Board and remain its property. A fixed proportion, depending on its size, of the stock of every library is exchanged at least every two months. All books are catalogued and fully prepared for use before being issued to public libraries and the Board maintains all the central stock records. A catalogue in book-form of the books, arranged by subjects, in all libraries is published annually by the Board and supplied to public libraries throughout the State and to government senior high schools. This facilitates access by library users to the whole stock of the Board, through any library.

The library service of Western Australia consists of the State Reference Library, which functions as the reference division of the service, the Central Music Library, a number of independent public libraries jointly supported by local authorities and the Board, and the State Bibliographical Centre which links all libraries in the State.

State Reference Library

The State Reference Library differs from other libraries in that its function is not principally to supply books but to provide information in answer to inquiries. It handles some 125 serious or research inquiries per day, and for this purpose is divided into five specialist subject units comprising four libraries and one centre.

The J. S. Battye Library of West Australian History was developed from the former Archives Branch. All material relating to Western Australia, including the State archives, has been concentrated in this library. The other libraries are The Library of Business, Science and Technology, The Library of Social Sciences, Philosophy and Religion and The Library of Literature and the Arts. The Information Centre is equipped with current Australian and overseas telephone and trade directories, business guides, commercial publications and a wide variety of similar quick reference material. The Centre is designed principally to provide immediate answers to inquiries, mainly in the commercial field. Current newspapers, which include all those published in Western Australia, the main ones from other Australian States and a representative selection from overseas countries, are available for reference in the Information Centre.

The State Reference Library is fully equipped with micro-film and photo-copy apparatus and copies of material are available on payment of an appropriate fee. In addition to providing reference library facilities for the metropolitan area, its service extends throughout the State, through the agency of a local public library wherever possible but also by post direct to country inquirers not in contact with a local library.

Central Music Library

The Central Music Library, situated in the State Reference Library building, is the principal music library of the State. It offers a full reference service in the field of music and scores are available on loan. Facilities are also provided for listening to musical recordings.

Local Public Libraries

At 30 June 1973 there were 141 local public libraries associated with the Library Board's service. The local government authorities conducting these libraries provide accommodation and staff, while the Library Board provides the books and bibliographical services. The administrative independence of the local libraries is secured under the provisions of the *Library Board of Western Australia Act, 1951-1965*. Apart from exercising a statutory obligation in respect of the expenditure of State subsidies, the Board takes no direct part in the administration of local public libraries. Books are provided on a minimum basis of 1.1 volumes per head of the population of the district concerned and all non-fiction books in public libraries throughout the State are made available on request to the Board at any library associated with its library service.

State Bibliographical Centre

The purpose of the State Bibliographical Centre is to encourage and facilitate co-operation between all libraries in Western Australia so that the total resources in the State may be made as widely available as possible to all library users.

The Centre operates the Request and Information Service provided by the Board for all public libraries, organises inter-library loans for or between any other approved libraries in the State or elsewhere, and offers bibliographical assistance to any library and to users of the State Reference Library. For these purposes it is equipped with catalogues of the whole stock of the Library Board and with union catalogues of both books and journals in some 200 other libraries ranging from those of the University of Western Australia and The Western Australian Institute of Technology to highly specialised collections held by private firms or government departments. It also has a very large range of published bibliographies from many parts of the world.

THE WESTERN AUSTRALIAN MUSEUM

The Western Australian Museum has developed from two earlier collections. One of these, the museum of the Swan River Mechanics' Institute, was founded by public subscription in 1860, and the other, the Geological Museum at Fremantle, was started in 1881. In 1889 the contents of the Geological Museum were moved to the former Perth Gaol (which is still part of the Western Australian Museum) and a Curator was appointed in 1891. In the following year the museum of the Swan River Mechanics' Institute was purchased, and the collections combined to form the Public Museum which, in 1897, became known as the Western Australian Museum.

Under the provisions of the *Museum Act, 1969-1973*, The Western Australian Museum is governed by seven Trustees appointed by the Governor. The staff includes a Director, a Deputy Director, two Divisional Heads, twelve Curators and other professional and technical staff, and is grouped functionally within Divisions of Human Studies and Natural Science, service departments and a small administrative unit.

The headquarters of The Western Australian Museum and its principal display galleries are situated in Perth. A branch of The Western Australian Museum containing maritime and historical displays was established at Fremantle in 1970. It is governed by a Committee of Management appointed by the Minister responsible for the Museum Act.

The work of the Museum relates mainly to natural sciences and human studies. It contains collections devoted to zoology, palaeontology, meteorites, archaeology, anthropology, history, technology and military exhibits. Emphasis in both display and research is on the fauna and the human population, past and present, of Western Australia. There is an extensive scientific library which also houses the library of the Royal Society of Western Australia. Research within the Division of Natural Sciences is related specifically to marine fauna, mammals, birds, reptiles, insects and fossils of the State. The Division of Human Studies is concerned with prehistoric archaeology and art, Aboriginal material culture, colonial history, maritime history, underwater archaeology, industrial and agrarian technology, and arms and armour.

The *Museum Act, 1969-1973* allows the Trustees to assist in establishing and maintaining municipal museums. The Museum's role is mainly to assist by making available the expertise of its own staff in designing layout, advising on material and restoration problems, and lending showcases and material.

The Museum is an active educational instrument. Members of the scientific staff lecture in University Extension programmes and in the University departments. A children's centre, staffed by a Museum teacher provided by the Education Department, is open during school holidays. Children voluntarily participate in general knowledge tests and other exercises designed for vacation activities. Regular classes are held during school terms, and special visits are made by children from schools not included in the regular series.

The Museum Act specifically vests in the Museum six ships wrecked off the Western Australian coast in the 17th and 18th centuries. It also makes provision for the vesting of any other ship abandoned, wrecked or stranded before 1900 and lying in territorial waters of the State, if the Director is of the opinion that the wreck is of historical, scientific, archaeological, educational or other special national or local interest. It is further provided that every meteorite situated on land vested in the Crown shall be the property of the Museum.

In connection with its work of education, research and conservation, the Museum is often called upon to act in an advisory capacity to Government departments. In particular, senior staff serve on committees formed for the purpose of protection of the environment and of native fauna. The Museum is assisted in certain fields by Honorary Museum Associates, some of whom serve on Advisory Committees.

Under the provisions of the *Aboriginal Heritage Act, 1972* the Museum is responsible for administering the work of the Aboriginal Cultural Material Committee. The Act requires that the Registrar of Aboriginal Sites, the principal executive officer of the Committee, shall be a member of the staff of the Museum. The main function of the Committee is to evaluate, record and preserve Aboriginal sites and specific traditional Aboriginal artefacts within Western Australia.

THE WESTERN AUSTRALIAN MUSEUM (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure—					
Salaries and wages	\$ 184,820	225,059	353,109	507,117	581,976
Other	\$ 80,477	140,861	224,100	312,916	345,234
Total	\$ 265,297	365,920	577,209	820,033	927,210
Square feet of—					
Display area (b)	6,832	6,832	*19,000	22,000	34,030
Storage area (b)	11,400	16,850	16,000	20,000	27,000
Total	18,232	23,682	*35,000	42,000	61,030
Number of—					
Staff (b) (c)—					
Full-time—					
Professional	13	20	26	30	35
Technical	23	29	36	38	41
Administrative and clerical	10	9	14	16	17
Attendant-receptionist	7	6	15	17	23
Honorary	2	2	4	6	2
Total	55	66	95	107	118
Man-days spent on field work	901	501	2,084	2,408	2,024
Guide lectures to school parties	530	519	457	639	1,074
Children attending lectures	19,738	18,451	16,421	22,119	34,320
Children's Centre school vacation attendances	36,883	40,881	25,037	22,970	47,917
Total visitors' attendances (d)	124,416	141,998	232,734	296,691	283,237

(a) Including Fremantle Branch, opened October 1970.
(d) Including attendances of school children. * Revised.

(b) At 30 June.

(c) Figures revised since previous issue.

THE WESTERN AUSTRALIAN ART GALLERY

The Western Australian Art Gallery is under the control of a Board of five members appointed by the Governor under the provisions of the *Art Gallery Act, 1959-1968*.

The Gallery occupies part of a building shared with the Museum. The lower gallery is used mainly for lectures, art films and the display of interstate and overseas exhibitions. Works from the permanent collection are exhibited in the upper gallery, while the print room is used to house and exhibit the collection of prints and drawings. Both displays are changed regularly. Important pieces of sculpture are on permanent display in both galleries and in an exterior courtyard designed for this purpose. Aboriginal grave and tribal posts, carvings and paintings are on permanent display in the upper gallery.

At 30 June 1973 the area available for display was 9,000 square feet, and for storage 6,100 square feet.

The Gallery has extended its services throughout the metropolitan area and country districts. Branch gallery facilities exist at the Cultural Centre at Derby where an exhibition of paintings from the permanent collection is displayed and changed each year. Reproductions of paintings are circulated by means of its loan service to various public institutions, and touring exhibitions from the permanent collection are taken to country districts at regular intervals.

These activities are supplemented by publications of various kinds, which are distributed to schools and other institutions or direct to the public. Reproductions of some works in the collection are also available.

The Art Gallery operates a general information service which is widely used, and tours of the Gallery are conducted for organised groups of adults, students and school-children. Children's art classes, which are supervised by the Gallery's education officers, are held during school holidays.

Members of the professional staff are called upon to judge exhibitions, give public lectures, and sit on various planning and advisory committees.

THE WESTERN AUSTRALIAN ART GALLERY

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure—					
Salaries and wages	\$ 50,715	68,564	88,201	98,875	114,265
Acquisition of exhibits	\$ 41,041	112,009	46,014	66,967	76,892
Special exhibitions	\$ 5,745	10,771	11,690	12,780	14,370
Printing	\$ 6,384	8,324	7,380	7,742	5,506
Other	\$ 23,029	23,951	21,537	27,929	34,015
Total	\$ 126,914	223,619	174,822	214,293	245,048
Number of—					
Staff (a)—					
Full-time—					
Professional	3	3	3	3	3
Administrative and clerical	4	5	5	5	5
Other	10	12	10	13	14
Honorary	5	5	3	3	3
Total	22	25	21	24	25
Exhibits for display (a)—					
Oil paintings	470	482	499	520	546
Water colour paintings	196	206	207	210	218
Drawings	426	438	453	460	481
Engravings, prints, woodcuts	1,176	1,300	1,354	1,407	1,447
Sculptures	56	57	67	67	72
Ceramics	427	427	430	443	445
Jewellery, medallions, coins	827	831	834	834	(b) 44
Other	234	265	272	345	378
Total	3,812	4,006	4,116	4,286	3,631
Special exhibitions	7	10	7	9	8
Visitors' attendances	126,786	121,718	118,059	130,317	138,118

(a) At 30 June.

(b) Medallions and coins transferred to The Western Australian Museum.

THE WESTERN AUSTRALIAN ARTS COUNCIL

The Western Australian Arts Council was established by the *Western Australian Arts Council Act, 1973*, operative from 1 December 1973. The Council took over the functions of the Western Australian Arts Advisory Board. In terms of the Act, 'it shall be the general duty of the Council to encourage, foster, and promote the practice and appreciation of the arts in Western Australia'. The Council may make grants, pay subsidies or furnish advances to local authorities, organisations or persons engaged in activities consistent with this duty. Subject to the provisions of the Act, the Council may 'generally do whatever it considers necessary or expedient in order to stimulate artistic or cultural activity'.

Funds available to the Council to enable it to exercise its functions include amounts appropriated by the State Parliament or made available by the Australian Government, amounts borrowed by the Council under the provisions of the Act, and moneys which may be advanced by the Treasurer.

STATE GOVERNMENT OBSERVATORY

The Perth Observatory was originally established, near King's Park, in 1896; the present buildings, near Bickley in the Darling Range, were officially opened on 30 September 1966.

The astronomical instruments at the Observatory are a photographic refractor of thirty-three centimetres aperture, the Hamburg Observatory's nineteen-centimetre meridian

transit telescope, and the Lowell sixty-centimetre reflector. A forty-centimetre reflector, constructed by the Physics Department of the University of Western Australia, is also in operation at the Observatory site.

The photographic refractor is used for investigations of stellar motions based on measurements of old (1900-1920) and recent photographs; for the recovery of minor planets which have been unobserved for several years; for positional observations of comets, which are used in investigations of comet orbits; and for securing photographs, to a faint magnitude limit, of significant areas of the southern sky, which may be used in the future in determinations of stellar motions.

From late in 1967 to the end of 1971, a team of astronomers from the Hamburg (West Germany) Observatory carried out a programme of observations of the positions of reference stars in the southern hemisphere. Their automated meridian transit telescope is now on indefinite loan to the Perth Observatory, whose staff are continuing with programmes in this field, which is basic to all work in positional astronomy. The current programme is designed, through international collaboration, to extend the fundamental catalogue of star positions.

The sixty-centimetre reflecting telescope was installed at the beginning of April 1971. It is used mainly for observation in the International Planetary Patrol Program, which is financed by the National Aeronautics and Space Administration of the United States of America and conducted by the Lowell Observatory, of Flagstaff, Arizona, U.S.A. This programme involves the photography, with identical cameras at six observatories, well distributed in longitude, of the planets Mars, Jupiter and, occasionally, Venus. Each planet is photographed, through four standard colour filters, systematically throughout the period during which it is available. The purpose of this programme is to set up an extensive library of photographs for the study of temporal variations in the atmospheres and surface features of these planets.

The telescope is also equipped with a photometer, which was used during 1973 to record a series of mutual occultations and eclipses between the four major satellites of Jupiter. In 1974, when the Planet Patrol observations will be reduced in scale, the telescope will be used in investigations of the variations in brightness of planet satellites and of asteroids.

A project of the United States Naval Observatory, of Washington, D.C., for the installation of a twin twenty-centimetre telescope at Bickley, has been delayed through instrumental and financial difficulties.

The Observatory maintains the time service for the State, and provides an astronomical information service for educational and general interest inquiries. It is open to visitors daily, except Saturdays, at 3 p.m.

STATE GOVERNMENT CHEMICAL LABORATORIES

In 1922 the various chemical services of the State Government were amalgamated to form the Government Chemical Laboratories, primarily for the performance of chemical work required by Government departments. In addition, the Laboratories serve government instrumentalities and semi-government authorities and undertake some chemical work for the general public. The activities of the Laboratories are organised under seven Divisions, the separate functions of which are described briefly in the following summary.

The *Agriculture Division* does analytical work, on soils, for basic research, the effect of fertilisers, cultivation methods and crop rotation; on plants, as fodders for livestock and also to assess the nutritional requirements of plants with particular reference to the use of fertilisers and the correction of trace element deficiencies; on fertilisers and manures generally; and on animal tissues for diagnostic purposes.

The *Engineering Chemistry Division* is concerned mainly with research into the utilisation of the State's natural resources, particularly fuel and mineral resources. Investigations are carried out on specific technological problems at the request of Government, industry, or individual sponsors, or are initiated from within the Division. Facilities are

available for physical and chemical testing of coals and other fuels and for experimental work on most aspects of fuel utilisation, ore dressing, chemical engineering and metallurgical processing.

The *Food, Drugs, Toxicology and Industrial Hygiene Division* deals with the analysis of foods, including milk; drugs; police work, including human and animal toxicological examinations for poisons and analysis of blood and urine for alcohol concentration; industrial hygiene, including determinations relating to the amount of potentially harmful substances present in industrial and commercial materials or associated with working conditions; and industrial effluents and pollution surveys of river and ocean waters.

The *Industrial Chemistry Division* provides, for Government, industry and the public generally, a source of technical information and advice on matters relating to industry and its products. It also advises on the potential of new methods or improvements in existing processes, and undertakes related experimental investigations.

The *Kalgoorlie Metallurgical Laboratory* carries out research in mineral beneficiation and ore treatment for mining companies and prospectors. Assays and mineral analyses are done in the course of this work and also on separate samples.

The *Mineralogy, Mineral Technology and Geochemistry Division* is basically concerned with minerals, their occurrence and identification, but it also carries out the testing of clays and of aggregates for cement and concrete work, as well as corrosion and other tests. Analyses are done for the Geological Survey Branch of the Department of Mines in connection with mineral surveys, notably those for copper and iron. This Division is also the reference laboratory for analyses of crushings of gold ores by the State Batteries. An important part of its work is the identification of mineral specimens forwarded by prospectors and others and the Division deals with many hundreds of such samples every year.

The *Water Division* analyses waters from all parts of the State for Government and the public and makes recommendations on their suitability for specific purposes. Most of the work is done on behalf of the Metropolitan Water Supply, Sewerage, and Drainage Board and the Public Works Department, to ensure that water supplies under their control comply with the accepted standards of water for human consumption. The Division also investigates problems associated with water distribution and industrial use, including cooling and heating waters and liquid wastes where corrosion, scaling or pollution are involved.

Details of the operations of the Government Chemical Laboratories are published in the Annual Report of the Director.

THE INSTITUTE OF AGRICULTURE, UNIVERSITY OF WESTERN AUSTRALIA

The Institute of Agriculture was established in 1938 within the University to provide research facilities and staff essential for the effective training of professional agricultural scientists at both undergraduate and graduate levels. It includes the teaching and examining Faculty of Agriculture, and the research staff associated with it. Although the Institute is financed to some extent from University funds, substantial research grants from producer organisations and other bodies and individuals interested in the promotion of agriculture have made possible most of the research that has been undertaken since its establishment.

During the first ten years of its existence, and despite the dislocation of the war years, it initiated research on plant and animal problems of the pastoral areas, commenced a series of fundamental studies related to the nutrition of ruminants, investigated factors affecting the baking quality and nutritive value of wheat and flour, elucidated factors affecting the fertility of sheep, and carried out a series of economic surveys of the sheep, wheat, dairying, pig, and poultry industries. The work of these years is summarised in the report of the Director, published in 1949.

Since 1948 the research programmes have been greatly increased and their scope widened. Plant breeding, selection and genetical research aimed at increasing the productivity and extending the climatic limits of crops and pasture legumes, especially sub-

terranean clovers, medics and lupins, was strongly developed and fundamental studies initiated on the nutritional physiology and microbiology of the wool sheep with particular reference to the factors influencing the utilisation of protein, of urea and of low-quality roughages. The agronomic research has been expanded to include cereal genetics studies, and the animal research to include nutritional studies with beef cattle. In recent years studies in mineral metabolism, especially sulphur, phosphorus, cobalt and zinc, have been initiated.

More detailed economic surveys of the wheat-sheep farming industry and of the butterfat producing and whole-milk producing industries have been carried out, together with studies of the comparative advantages of forestry and agriculture in parts of the south-west of Western Australia, and studies of egg-marketing problems. In 1961 the John Thomson Agricultural Economics Centre was set up within the Institute with funds supplied by banks, business houses and other organisations. The research economists of this Centre have completed an economic appraisal of irrigation from the Gascoyne River, an inter-industry comparison of the economy of Western Australia, and an investigation of farm population and land development potential in Western Australia. In 1967 a Farm Management Service Laboratory was set up as a service to farmers.

In 1963 a Department of Soil Science and Plant Nutrition was established within the Institute with a research group engaged in studies of soil physics, soil chemistry, soil microbiology and plant nutrition. The soil microbiology workers are mainly concerned with a continuation of earlier research into nodulation problems in legumes and the nitrogen-fixing process. The plant nutrition group has devoted particular attention to the uptake by crop and pasture plants of mineral nutrients, especially potassium, phosphorus, copper, zinc and manganese. The soil chemistry workers are specially concerned with the chemistry of soil organic matter and micronutrient cations, and the soil physics group with the role of the clay minerals in soil, with soil water, and the movement and retention of soil phosphorus and sulphur.

In 1966 a Department of Agronomy was established within the Institute. The research activities of the staff of this Department include the work in plant breeding mentioned previously and have been expanded to cover investigations into plant-water relations and agricultural climatology. A Department of Agricultural Economics and a Department of Animal Science and Production were established within the Institute early in 1971.

This brief review of the very wide range of the research activities of the Institute of Agriculture, at both the fundamental and at the more applied level, illustrates the extent to which it contributes to the assistance and service of the rural industries, indirectly by its training of agricultural scientists and directly through its manifold research projects.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

Two Divisions of the Commonwealth Scientific and Industrial Research Organization (CSIRO), namely the Division of Land Resources Management and the Division of Mineralogy, have their headquarters in Perth. In addition several other CSIRO Divisions have laboratories in Western Australia. While most of the research is relevant to agriculture and industry in this State, much of it is also applicable to other areas of Australia.

Division of Land Resources Management. Research in the Division is concerned with management techniques for achieving optimum productivity, consistent with conservation of land resources, and with the environmental implications of changes in land use.

Investigations are being undertaken to determine how the water and salt balances of the catchments in the Darling Range are affected by activities such as bauxite mining, forestry, housing, and recreation. The Darling Range is the sole water catchment supplying Perth and its developing industries. In areas under natural vegetation the amount of salts gained in the rainfall is offset by losses of salts in streams. However, when natural vegetation is removed groundwater recharge is increased and catchment areas yield both more salts and more water. In most areas this results in a decrease in water quality.

Research is being undertaken to determine how climatic factors in a Mediterranean environment influence the productivity of land under various systems of management. Studies are being carried out to establish how land being used in a particular way should be managed to sustain that use on a long-term basis. This involves an understanding of the structure of the system of land use and the study of processes within the system and their interactions. Such process studies include the examination of the nutrient requirements of winter crops and annual pasture species, the determinants of effective symbiosis in legumes, and the environmental effects of climatic variables and of management on plant growth and on the quality of both crops and pastures. Recent changes in practices have brought increased research on crop production and on the effects of temperature and water on growth throughout the life cycles of plants.

Division of Entomology. A long-term study of the ecology and population dynamics of two serious pasture pests, the red-legged earth mite and the lucerne flea, was commenced in 1952. The work has led to an understanding of the process involved in regulating numbers and has revealed the likely occurrence of agents for biological control. Two useful predatory mites were discovered in Europe and North Africa, and are now established in Western Australia. Detailed taxonomic studies of the families Bdellidae and Anystidae, to which these mites belong and of the host family Sminthuridae are in progress.

Jarrah is a most important source of timber in Western Australia. The foliage of this tree is attacked by the jarrah leaf miner, the larva of a small moth. The extent and intensity of this infestation seems to have increased in recent years, and in 1967 a detailed ecological study was commenced. Special attention is being paid to the possible effects on the environment of various silvicultural methods, including controlled burning and its influence on the natural control of the leaf miner by parasites and predators.

A programme of research into the pest insects of pome fruit orchards was started in 1968. The programme is designed to gather data for comparison with results obtained in eastern Australian orchards, and to provide a detailed understanding of the life system of San Jose scale. In unsprayed orchards San Jose scale is kept at a low level of abundance by a series of parasites and predators, and under such conditions does not damage trees.

In 1969-70 a large-scale field test of a granulosis virus of potato tuber moth was carried out in the lower south-west. The test was successful and the study has been expanded to give data relating to the epidemiology of the virus, the ecology of potato tuber moth, and the role and status of other pests of potatoes. In the test area the virus has become well established and flares up from time to time, depending on the density of potato tuber moth larvae and population stresses.

Division of Mathematical Statistics. The Division of Mathematical Statistics is concerned with the application of statistical methods to special problems of local interest in the fields of the applied and biological sciences. Its officers also act in an advisory capacity to other research workers in the State on matters relating to the design of experiments and the analysis and interpretation of data.

Division of Computing Research. The Division of Computing Research provides a computing service for research workers in other Divisions. Computing equipment installed includes key punch machines and a remote Batch computer terminal connected to a Cyber 76 computer in Canberra by means of an Australian Post Office leased telephone line.

Division of Mineralogy. The Division of Mineralogy is concerned with research bearing on the discovery and definition of Australian mineral resources. Its work deals mainly with the chemical and physical nature of geological processes of mineral formation and alteration.

Under two main programmes, mineralisation and exploration, studies are in progress on processes of ore genesis, particularly with respect to nickel sulphide ores, on supergene alteration of these ores, on the geochemical and petrological evidence for defining

areas of differing crustal development in the Archaean of Western Australia, and on improving techniques and interpretation of surface geochemical exploration in deeply-weathered arid terrain.

Division of Wildlife Research. The Division of Wildlife Research has a research group at Helena Valley, working on the higher vertebrates (more particularly mammals and birds). Investigations cover not only species of economic importance but also native fauna generally. The Division played a part, in association with the Department of Agriculture, in the control of rabbits by the introduction of the disease myxomatosis, and carried out a research project on the control of the Euro (a species of kangaroo) in the Pilbara district.

Studies of the ecology of the Emu, the Wedge-tailed Eagle in the pastoral zone, the White-tailed Black Cockatoo, the Noisy Scrub-bird, and the Galah are proceeding. Factors controlling breeding seasons of birds under Western Australian conditions are also being investigated.

Division of Fisheries and Oceanography. The Division of Fisheries and Oceanography has a research group studying population ecology, physiology and behaviour of the western rock lobster. This is a joint project shared with the Western Australian Department of Fisheries and Fauna. The project was expanded late in 1973 with the charter of a vessel to enable more detailed studies of rock lobster larvae to be undertaken and to facilitate basic research upon water circulation on and adjacent to the continental shelf of the western coast of Australia.

Division of Food Research. The Meat Research Laboratory of the Division of Food Research has an extension officer located in the laboratories of the Western Australian Department of Agriculture at South Perth. He is a member of the Meat Laboratory's Industry Section which is responsible for service, investigation, liaison and extension work in meatworks and meat processing establishments, to ensure that the results of investigations by the Commonwealth Scientific and Industrial Research Organization are made known and to encourage their application by the meat industry. The extension officer services processing plants in Western Australia and the Northern Territory and gives a limited extension liaison service to other food processing industries.

Division of Animal Health. The Melbourne Laboratory of the Division of Animal Health has set up a branch laboratory in the Institute of Agriculture at the University of Western Australia to investigate reproductive losses in sheep in Western Australia, with particular reference to pathological aspects of clover disease and possible infectious causes of infertility.

Division of Land Use Research. The Kimberley Research Station in the far north of Western Australia is operated jointly by the Division of Land Use Research and the Western Australian Department of Agriculture. Its function is to undertake research into the production of tropical irrigated crops suitable for use on the farms of the Ord River irrigation project and other northern areas.

Cotton is currently the chief commercial crop grown in the area and research is concentrated on cotton breeding emphasising hybridisation, insect control and cotton agronomy for improvement in quality. With the aim of diversifying production, research on other crops and irrigated pastures has recently been intensified. Sorghum research has been concentrated on variety selection and the development of suitable related agronomic practices. Oilseed crops have been tested as dry and wet seasons crops, respectively. During dry winter months the temperate crops of wheat, barley, oats and maize have also been grown successfully.

Research on the production of rice, kenaf and culinary peanuts is proceeding. Investigations into the agronomy of irrigated forages are associated with dry-lot feeding trials and diet supplementation trials for cattle raised in a range situation.

Division of Applied Geomechanics. With the increase in the number and size of buildings constructed in the central area of Perth, the problems of foundation design have been accentuated. The Division of Applied Geomechanics, which is based in Melbourne, has carried out a geotechnical survey of the occurrence and foundation characteristics of the soils of the Perth metropolitan area. All available bore-hole data for the city centre area have been gathered, collated and published in a report and the survey will be extended to cover the whole area of metropolitan Perth.

Many of the new buildings in Perth are, or will be, founded on reinforced concrete rafts. Due to the soil conditions and the uncertain effects of earthquake shocks on foundations, adequate design data are often not available. The Division has therefore undertaken a project to provide data on the performance of the rafts for several large buildings in the city area, including the Australian Mutual Provident Society building, the Reserve Bank building and the St Martin's City Centre. Measurements are being made of the contact stresses at the short-raft interface, pore water pressures, total settlement and deflected shape of the rafts, vertical and lateral soil movement, column loads imposed on the rafts and the stresses and strains within the rafts. Monitoring of these measurements will continue for some years. Correlation of the observed and estimated performance of the raft foundations will be used to improve current design techniques. This study has recently been extended to include the piled foundations of the new C.I.B. Headquarters building.

DEPARTMENT OF AGRICULTURE

Reference to the scientific work of the Department of Agriculture appears in the section *The Department of Agriculture* in Chapter VIII, Part 1—*Primary Production*, and also in Chapter VII, Parts 1 and 2.

BOTANIC GARDEN

The Botanic Garden was established in The King's Park in 1962 and is under the control of the King's Park Board (see following section *Public Parks and Reserves*). The Botanic Garden is the counterpart of The Western Australian Museum in the botanical field and complements the State Herbarium by maintaining collections of living plants for scientific and educational purposes. Its official objects are to foster public interest in the conservation and cultivation of the Western Australian flora; to contribute to public education in this field; to become a centre for botanical and horticultural research in the flora of Western Australia; and to provide a major tourist attraction.

The Garden, which was officially opened in October 1965, extends over eighty-four acres, made up of the Western Australian collection (forty-two acres), Californian, South African and Mediterranean collections (seven acres), and an arboretum of native trees (thirty-five acres). The indigenous flora of the State is represented in the Western Australian collection by approximately 1,200 species. Trees grown as specimens in the arboretum are mainly those which are native to the southern half of the State.

Parties from the Botanic Garden are regularly in the field for the collection of propagating material. Special attention is devoted to the preservation of rare species or species threatened with extinction. Seed of native plants collected is distributed from surplus stocks to botanical institutions throughout the world and sold to private growers and to nurserymen. A seed list, which normally offers from 1,000 to 1,300 species, is published annually, and more than 10,000 packets of seed are distributed each year.

Experimental work in propagation of native plants is carried out and a Wildflower Exhibition is held in the Park each spring. Lectures are given by members of the staff to interested societies and to students engaged in related courses of study. The public may also, by arrangement, consult members of the staff. Facilities are provided for the employment and training of students enrolled in the three-year course for the Certificate in Horticulture, which is conducted by the Technical Education Division of the Education Department.

PUBLIC PARKS AND RESERVES

It is within the power of the Governor to dispose of, in any manner which serves the public interest, lands which are vested in the Crown and, in terms of this authority, Crown land is frequently reserved by order of the Governor for a variety of public purposes. Some of this land is reserved for public recreation and amusement, national and other public parks, or flora and fauna sanctuaries and the reserves are controlled by statutory bodies, the more important of which are dealt with in this section.

The *National Parks Board of Western Australia* controlled forty National Parks and a number of other reserves at 30 June 1973, totalling in all about 4·26 million acres in area. Flora and fauna are protected and firearms prohibited in all National Parks and Reserves controlled by the Board. Picnic, recreational, camping and caravan facilities are available in certain parks and reserves.

NATIONAL PARKS BOARD OF WESTERN AUSTRALIA
PARKS AND RESERVES VESTED IN THE BOARD AT 30 JUNE 1973

National Park or Reserve	Area	National Park or Reserve	Area
	acres		acres
Alexander Morrison	21,014	Moore River	26,030
Araluen-Canning Dam Reserve	50	Nambung	42,835
Avon Valley	10,948	Nowergup Lake Fauna Sanctuary	288
Badgingarra	21,350	Neerabup	2,785
Cape Arid	642,000	Penguin Island Reserve	31
Cape Le Grand	54,876	Porongurup	5,532
Cape Range	33,171	Scott	3,400
Charles Gairdner Flora Reserve	1,441	Serpentine	1,571
Chichester Range	372,163	Sir James Mitchell	2,702
Cowaramup	2,174	Stirling Range	285,874
Drovers Cave	6,624	Stokes Inlet	1,600
East Perth Cemetery Reserve	12	Tathra	10,761
Fitzgerald River	599,373	Torndirrup	8,905
Frank Hann	64,480	Walpole-Nornalup	44,545
Geikie Gorge	7,750	Walyunga	4,341
Gooseberry Hill	81	Watheroo	81,205
Greenmount	127	William Bay	4,644
Haddleton Flora Reserve	1,762	Windjana Gorge	5,273
Hamelin Bay Reserve	3,113	Wolf Creek Meteorite Crater Reserve	3,607
Hamersley Range	1,458,430	Yalgorup	25,902
Hassell Road	3,161	Yallingup Reserves	4,659
John Forrest	3,903	Yanchep	6,894
Kalamunda	919	Yanchep Flora Reserves	439
Kalbarri	377,408	National Park near Porongurup	
Lesmurdie Falls	86	Range (a)	150
Matilda Bay Reserve	57		
Total area of National Parks and Reserves (b)			4,260,446

(a) Not officially named at 31 December 1973.

(b) Excludes a number of small reserves, totalling 55 acres, not listed above.

The *Emu Point (Albany) Reserve Board* controls a reserve containing an area of approximately 1,114 acres at Emu Point near Albany, which has been developed for recreation, camping and residential purposes. A hostel, two camping and caravan parks and a motel provide accommodation. Pen facilities are available for small boats and mooring areas are provided for professional fishing boats.

The *King's Park Board* administers an area of almost 1,000 acres close to the centre of Perth. Part of this area was dedicated in 1872 'for the purpose of a public park and recreation ground' and was enlarged in 1890. Beautification commenced in 1896 under the presidency of Sir John Forrest, and the name was changed in 1901 from Perth Park to The King's Park in honour of the accession of King Edward VII. In addition to its

original function as park and recreation ground, The King's Park has over the years gradually developed two other important functions, as a National Shrine and as a Botanical Reserve. In the former case it houses the State's most important monuments and commemorative features of a military and historical nature. A memorial to the South African war was built in 1901, and the State War Memorial to the fallen of both world wars was erected on a commanding position on Mount Eliza in 1929 and extended in 1952. 'Honour Avenues' of trees dedicated to individual fallen servicemen were planted in 1919 and later, and another avenue commemorates the State Centenary of 1929. There are smaller memorials erected by individual regiments or other military units, and a number of monuments to important historical personages.

The concept of the botanical reserve grew from the fact that four-fifths of the Park's area remained undeveloped under a natural bushland which contained many native wild-flowers. Increasing urbanisation and the loss of natural sites in and close to Perth made the retention of this bushland area a matter of scientific and aesthetic value. This function was strengthened from 1962 onwards by the establishment in the Park of a botanic garden and arboretum of eighty-four acres for the cultivation and display of Western Australian native plants. (See preceding section *Botanic Garden*.)

Recent developments have continued to contribute to the Park's aesthetic and recreational functions. A fully-equipped modern restaurant was erected in 1956, close to such features as a floral clock, a wishing well, a giant karri log and an observation platform. There are several public barbecue sites and many miles of pedestrian paths and tracks. The original fifty acres of lawns and shrubberies have been materially extended by the Botanic Garden development. Four new lawns have been added within the Garden, one of which encircles a landscaped water garden with four pools, two cascades and a waterfall, one pool featuring an illuminated fountain dedicated to the pioneer women of the State. A picnic lawn, refreshment kiosk, and children's nature playground have been established around an artificial lake at the western end of the park and linked to older-developed areas by a mile-long vista leading to a viewing tower.

The *Zoological Gardens Board* administers the Zoological Gardens at South Perth, an area of forty-four acres of animal enclosures, cages, lawns and gardens. The Zoological Gardens were established in October 1898 for the collection and display of mammals, birds, reptiles and fish from all parts of the world, but specialising in Australian, and particularly Western Australian, fauna. The Zoo is open to the public every day of the year. During the year ended 30 June 1973, 79 species of mammals, 286 species of birds and 37 species of reptiles were exhibited. In this period 339,679 people paid for admission and, in addition, 3,503 disadvantaged children and adults were admitted free.

The *Rottneest Island Board* administers as a tourist and holiday resort a reserve comprising almost the whole of Rottneest Island, which is situated about eleven miles west of Fremantle. The settlement at Thomson Bay contains 125 cottages and bungalows to let, a hotel, lodge, camping areas and all services. Recreational facilities include a golf course, tennis courts, bowling green and a riding school. The coastline is ringed by a road system with access to the various swimming and fishing areas. There is a land-backed wharf and three jetties in Thomson Bay and jetties at Geordie Bay and Green Island. Special features of the island include the marsupial known as the Quokka and the Rottneest Island Daisy. The island is served daily by air and sea transport. Visitors to the island in 1972-73 totalled 157,000.

Caves Reserves. Extensive limestone caves have been discovered at several places in the south-west part of the State. Some of them, between Cape Naturaliste and Cape Leeuwin and at Yanchep, have been developed for public inspection and certain areas of the surrounding land have been reserved, notably at Yanchep, Yallingup, Margaret River and Augusta.

Local Government Reserves. Many local authorities hold land for recreational purposes, the areas having been either Crown land vested in the Council, acquired by way of purchase, or received under private bequest. Included in these local government reserves

are areas required to be surrendered to the Crown by private owners, when subdividing land into residential lots in order to provide recreation areas for the holders of lots in the subdivision. The reserves are frequently developed as public parks or to provide facilities for sports or camping.

The Community Recreation Council of Western Australia controls reserves, used principally as camp sites by youth and sporting groups, at Point Peron on the coast south of Fremantle, at Bickley, east of Perth in the Darling Range, and at Guildford near Perth. A reserve at Sorrento, north of Perth, is at present under development.

Chapter V—continued

Part 3—Health Services, Hospitals, and Care of the Aged and Disabled

HEALTH SERVICES

The Australian Government and State Government health authorities, together with Boards of Health under local government administration, co-operate in maintaining health services and in the prevention and control of infectious diseases in Western Australia.

Australian Government Services

The National Health Services provided under the National Health Act are controlled partly by the Department of Health and partly by the Department of Social Security. Each of these Departments is administered, subject to the control of the relevant minister, by a Director-General. There is also, in each State, a Director who is responsible to the Director-General. The administration of the Quarantine Act is another function of the Department of Health.

National Health Services. National Health Services financed from the National Welfare Fund, to which reference is made on page 230, include hospital and nursing home benefits; medical benefits; pharmaceutical benefits; handicapped children's benefits; domiciliary nursing care benefits; and the payment of tuberculosis allowances and other forms of assistance in tuberculosis control. (For rates and conditions applying to payment of these benefits see letterpress *National Health Services* on pages 239-44.) Additional expenditure from the National Welfare Fund in relation to health services includes the cost of district health laboratory services, the free supply of certain prophylactic materials and biological products (e.g. poliomyelitis vaccine), the supply and maintenance of hearing aids for persons aged up to twenty-one years and for eligible pensioners and their dependants, subsidies to various voluntary organisations conducting home-nursing services that are assisted by the State Governments or local government authorities, the supply of artificially produced radio-active isotopes to private medical practitioners and hospitals for medical treatment purposes, and expenses in connection with the blood fractionation plant of the Commonwealth Serum Laboratories.

Quarantine. The *Quarantine Act* 1908-1973 provides for the quarantine of humans, animals and plants. Human quarantine is concerned primarily with the procedures necessary to exclude quarantinable diseases, namely smallpox, plague, cholera, yellow fever, typhus fever, leprosy, and such other diseases as may be declared under the Quarantine Act. Animal quarantine regulates the importation of animals and animal products from overseas, and plant quarantine the importation of all plants and plant products, with the object of excluding plant diseases, insect pests and weeds. In respect of interstate movements of animals and plants, the Quarantine Act becomes operative only when it is considered that Australian Government action is necessary for the protection of any State or States, and in general the control of interstate movements of animals and plants is the responsibility of State Governments.

State Government Services

The principal Statute relating to the provision and regulation of health services in Western Australia is the *Health Act, 1911-1973*, which is administered, subject to the control of the Minister, by a Commissioner of Public Health. The Act is comprehensive in scope and confers on the Commissioner the powers necessary for the prevention and control of infectious diseases; the enforcement of sanitation, building and pure foods

standards; the control of nuisances and offensive trades; the regulation of the sale of pesticides and the manufacture of therapeutic substances; and the registration of private hospitals and the licensing of maternity homes. Other Acts under Public Health administration are the Anatomy Act, the Clean Air Act, the Cremation Act, the Poisons Act and the Radioactive Substances Act.

The Public Health Department maintains a health laboratory service which provides diagnostic medical laboratory services for a major metropolitan general hospital (Sir Charles Gairdner Hospital), for all those areas of Western Australia not otherwise served by medical laboratories, for government and charitable institutions and for pensioners. A public health epidemiological service is also provided for the State; nutritional, health and other surveys are undertaken; and forensic laboratory work is done for the Police Department and the Crown Law Department. A new central laboratory building is under construction at the Perth Medical Centre being established at Hollywood under the provisions of the *Perth Medical Centre Act, 1966-1973*.

The Health Education Council is established as a statutory body under the provisions of the *Health Education Council Act, 1958-1961*. The Council conducts publicity campaigns and public lectures on matters affecting public health, including home accidents, handling of poisons, poliomyelitis and diphtheria immunisation and the control of flies and mosquitoes.

The Cancer Council of Western Australia is constituted under the provisions of the *Cancer Council of Western Australia Act, 1958-1964* as a statutory body with the functions of co-ordinating, promoting and subsidising research into the cause, diagnosis, prevention and treatment of cancer.

Infectious Diseases

The *Health Act, 1911-1973* provides for the compulsory notification of infectious diseases and for the application of preventive measures. For the purposes of the Act, infectious diseases are those which are specified in the Act, as well as any other diseases which may, from time to time, be declared. The occupier of premises where such a disease occurs is required to notify the local authority forthwith. The medical practitioner who attends a person suffering from an infectious disease must, on the day on which he becomes aware of the nature of the disease, notify the occupier and also the local authority and the Commissioner of Public Health.

On the appearance of any epidemic, endemic or contagious disease, the local authority is required to notify the Commissioner immediately and to report periodically on the disease. The Act provides for the disinfection and cleansing of premises and for the disinfection and destruction of bedding, clothing or other articles which have been exposed to infection. The Commissioner may require any person suspected to be suffering from, or to be a carrier of, an infectious disease to submit to medical examination.

NOTIFIABLE DISEASES (a)—NUMBER OF CASES NOTIFIED (b)

Disease	1968	1969	1970	1971	1972
Brucellosis	1	2	2	1	2
Diphtheria	1	1	2	1	1
Infectious hepatitis	147	146	166	291	163
Leprosy (c)	26	39	28	25	10
Leptospirosis	1	1	1	1	2
Paratyphoid fever	1	1	1	1	1
Poliomyelitis	2	1	1	4	4
Tetanus	2	1	1	4	1
Tuberculosis	*182	*160	*148	*143	155
Typhoid fever	2	3	1	1	2
Typhus (all forms)	1	1	1	1	1

(a) See letterpress immediately following table. (b) Figures exclude cases where the original diagnosis was subsequently disproved. No cases of cholera, plague, smallpox or yellow fever were notified during the period. (c) Aborigines account for practically all of these cases.
* Revised.

The previous table shows, for Western Australia, the number of cases notified during the years 1968 to 1972 for those diseases notifiable in all, or nearly all, States and Territories

of Australia. In May 1965 the National Health and Medical Research Council at its Fifty-ninth Session proposed a basic list of diseases to be notifiable in each State and Territory and this table is based upon that proposal. The table does not include all diseases which are notifiable in Western Australia.

Leprosy and trachoma are endemic among the Aborigines of the Kimberley Division in the far north of the State, and cases are, with few exceptions, confined to the Aboriginal population. The Department of Public Health and the Northern Territory Medical Service co-operate in the control of these diseases.

The Commissioner of Public Health may compel any person believed to be suffering from venereal disease to undergo examination by a medical practitioner. Any person who is aware or suspects that he is suffering from venereal disease is required to consult a medical practitioner and, if found to be infected, must continue treatment until a certificate of cure is issued. Free treatment is available at public hospitals. In 1972, 1,467 cases of gonorrhoea and 258 of syphilis were notified to the Department.

A joint campaign of tuberculosis control is conducted by the Australian Government and the State Governments. Under the provisions of the *Tuberculosis Act* 1948-1973, the Australian Government reimburses the State for capital expenditure incurred after 1 July 1948, and for net maintenance expenditure in excess of that of the base year 1947-48. In addition, the Australian Government pays allowances to tuberculosis sufferers and their dependants, as set out in Part 5 of this Chapter. Western Australia, like the other States, carries out the actual work of diagnosis and treatment. Under the *Health Act, 1911-1973* (State), all persons in Western Australia may be required to undergo X-ray examinations, which are conducted by mobile units of the Tuberculosis Control Branch and at its Perth and Fremantle Chest Clinics.

Special Health Services for Children

In addition to measures provided for immunisation against poliomyelitis, diphtheria and other infectious diseases, Child Health Services and School Medical and Dental Services assist in maintaining the general health of children in Western Australia.

Child Health Centres have been established throughout the State to advise mothers concerning the care of infants. Expectant mothers are also assisted in this way and country mothers who are unable to attend a Centre may receive advice by letter under a Correspondence Nursing Scheme. It is estimated that three out of every four infants in the State are taken to a Centre at least once in the first year of life. Child Health Sisters also visit remote areas of the State and interview mothers who are normally dependent on advice given by correspondence.

CHILD HEALTH CENTRES

Particulars	1968	1969	1970	1971	1972
Expenditure (a)—					
Salaries and wages \$'000	275	305	344	*370	494
Other \$'000	60	63	73	94	105
Total \$'000	335	368	417	*464	599
Number of—					
Staff (b)—					
Medical officers	2	2	2	1	1
Nurses	85	84	84	83	92
Total	87	86	86	84	93
Child health centres (b)	72	76	78	84	89
Mobile clinics (b)	4	3	4	4	4
Total	76	79	82	88	93
Attendances at centres—					
Individual infants	36,773	38,407	40,020	41,927	43,166
Total attendances	256,129	256,304	273,368	276,056	273,226
Infants examined at pre-school centres	6,235	6,491	7,386	(c)	(c)
Home visits by nurses	27,210	27,778	31,375	31,697	33,343

(a) Year ended 30 June.

(b) At 31 December.

(c) Not available.

* Revised.

The School Medical Services provide for a complete medical examination of each child during the first year at school. Subsequent screening for visual and hearing defects is carried out on two further occasions during school life. In addition medical assessment for physical, mental or learning handicap is available on the request of either teacher, guidance officer, or parent. Parents are notified of any defects detected during such examinations and advised to seek attention through their family doctor when necessary. Visual and hearing defects are the conditions most frequently reported. Similar services are available for pre-school centres, kindergartens and day care centres.

The Dental Health Service operates mainly in country areas where private practitioner dental services are not available. Dental examinations of primary school children are conducted in conjunction with the Child Health Service. Parents are advised of dental disease requiring treatment. The cost of work done as a consequence by private dentists may in some cases be subsidised from government funds.

Royal Flying Doctor Service of Australia

The Royal Flying Doctor Service of Australia is a non-profit organisation financed by grants from the Australian and State Governments and by private donations. The principal function of the Service is to provide aerial medical services for residents in remote areas. Isolated townships, mining centres and sheep and cattle stations are usually equipped with two-way radio sets and, by this means, are linked with bases where doctors are available for radio consultation in the event of sickness or accident. In serious cases a doctor flies to the patient, who may then be flown to hospital for treatment. The Service provides, through the Australian Department of Health, standard medical chests with directions for the use of the drugs and medical supplies which they contain.

The radio network of the Royal Flying Doctor Service is regularly used in the work of Schools of the Air conducted by the Education Department, and also for the transmission and receipt of telegrams. In addition, it may be used, as the need arises, in connection with flood relief, in searching for lost parties and in co-ordinating movements of livestock.

The following table shows particulars concerning the operations of the Western Australian Section of the Service during the five years ended June 1973.

ROYAL FLYING DOCTOR SERVICE OF AUSTRALIA
OPERATIONS OF WESTERN AUSTRALIAN SECTION

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Expenditure \$'000	178	245	283	351	407
Number of—					
Medical flights	841	1,041	1,161	1,193	1,257
Miles flown	423,065	516,690	602,702	648,523	725,731
Patients transported	946	1,412	1,717	1,749	2,220
Patients attended	5,124	6,558	9,345	(a) 17,781	(a) 16,870
Radio and telephone consultations	2,201	2,520	2,547	2,082	1,902

(a) Not comparable with figures shown for 1970-71 and earlier years due to inclusion of some services (e.g. immunisation) previously excluded.

HOSPITALS OTHER THAN MENTAL HOSPITALS

Australian Government Hospitals

The Repatriation General Hospital at Hollywood and the Edward Millen Hospital at Victoria Park provide free medical treatment for ex-servicemen and ex-servicewomen in respect of disabilities which have been accepted as due to war service. With certain exceptions, ex-servicemen or ex-servicewomen who are totally and permanently incapacitated as a result of war service, or who receive war pensions at the intermediate rate, or at the maximum general rate (see letterpress *War Pensions* on page 237) and service pensioners are entitled also to free treatment for disabilities not caused by war service. Widows and children of deceased ex-servicemen whose deaths are accepted as due to war

service may also receive free treatment. If the deceased serviceman was unmarried, his widowed mother may receive free treatment if widowed prior to his death or within three years after his death.

State Government and Government-assisted Hospitals

The *Hospitals Act, 1927-1973* is administered, subject to the direction of the Minister for Health, by the Medical Department. For administrative purposes, a hospital under the direct control of the Medical Department is classified as 'departmental' and is financed from State funds. A hospital classified as a 'Board' hospital has its own board of management and is subsidised by the State Government.

The principal government and government-assisted hospitals are the Royal Perth Hospital, Fremantle Hospital, Sir Charles Gairdner Hospital, King Edward Memorial Hospital for Women, Princess Margaret Hospital for Children, the Home of Peace for the Chronic Sick, the Perth Dental Hospital, and Mount Henry Infirmary and Sunset Infirmary for geriatric patients.

Departmental and Board hospitals collect fees from patients able to pay for treatment, and receive hospital benefit payments provided by the Australian Government under Part V of the *National Health Act 1953-1973* (see letterpress *Hospital and Nursing Home Benefits* on pages 239-40), but are financed mainly from State Government funds.

DEPARTMENTAL AND BOARD HOSPITALS (a)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Expenditure—					
Capital funds.... \$'000	5,568	6,707	8,548	9,197	5,231
Hospital Fund—					
Establishment and domestic (b).... \$'000	3,937	4,129	5,076	6,913	7,072
Salaries and wages.... \$'000	21,404	24,330	28,958	36,142	47,114
Other.... \$'000	11,069	12,902	14,839	17,667	19,208
Tuberculosis.... \$'000	474	495	534	554	559
Total \$'000	42,452	48,562	57,956	70,474	79,183
Number of—					
Hospitals (c)—					
Departmental....	43	46	46	47	46
Board....	52	52	53	54	54
Total	95	98	99	101	100
Beds (d)—					
Departmental....	3,223	3,274	3,073	3,167	3,265
Board....	3,449	3,583	4,009	4,071	4,015
Total	6,672	6,857	7,082	7,238	7,280
Staff (c)—					
Medical....	205	264	306	393	392
Nursing....	4,656	4,651	5,003	5,622	6,171
Other....	4,896	5,097	5,518	5,939	6,176
Total	9,757	10,012	10,827	11,954	12,739
In-patients—					
At beginning of year....	4,631	4,769	5,034	5,182	5,367
Admissions....	131,518	140,985	150,278	159,244	168,436
Discharges....	128,321	137,507	146,896	155,891	165,077
Deaths....	3,059	3,213	3,234	3,168	3,347
At end of year....	4,769	5,034	5,182	5,367	5,379
Average daily number resident....	4,648	4,873	4,922	5,112	5,338
Out-patients—					
Individuals....	279,555	339,644	378,538	416,540	464,016
Treatments....	786,293	861,384	807,748	988,028	1,112,704

(a) Includes particulars of the Perth Dental Hospital and Mount Henry Infirmary and Sunset Infirmary for geriatric patients. (b) Maintenance of equipment, furnishings and minor repairs. (c) At 30 June. (d) At 31 July.

As previously indicated, the control of tuberculosis is chiefly a State Government activity, supported by Australian Government subsidies and carried out under the direction of the Commissioner of Public Health. The principal institution for the treatment of tuberculosis is the Sir Charles Gairdner Hospital at Hollywood.

Leprosy, which is confined almost entirely to the far north of the State, is treated at a leprosarium at Derby in the Kimberley Division.

Private Hospitals and Nursing Homes

In addition to the government hospitals there are a number of private general and maternity hospitals, which are registered and inspected by the Department of Public Health. The principal private hospitals are those established by religious bodies in the metropolitan area and the main country towns. These include the Hospitals of Saint John of God at Subiaco, Rivervale, Bunbury, Geraldton and Kalgoorlie; Saint Anne's, Mount Lawley; the Mount Hospital, Perth; Bethesda Hospital, Claremont; the Hillcrest Maternity Hospital, North Fremantle and Saint Joseph's Hospital, Bicton.

Private hospitals collect fees from patients and receive hospital benefit payments provided by the Australian Government under Part V of the *National Health Act* 1953-1973. At 30 June 1973 there were 122 private hospitals and nursing homes in Western Australia approved for payment of hospital benefits and nursing home benefits under the Act. These hospitals and homes had a total bed capacity of 5,344 at that date.

MENTAL HEALTH SERVICES

The *Mental Health Act, 1962-1973*, which consolidates and amends the law relating to the treatment of mental disorders, came into operation on 1 July 1966. The Mental Health Services established under the Act are administered, subject to the control of the Minister for Health, by the Director of Mental Health Services. The Director must be a psychiatrist and is appointed by the Governor. Institutions authorised by the Act include hospitals for the treatment of mental illness, reception homes, out-patient and child guidance clinics, day hospitals, training centres, geriatric centres, hostels, and sheltered workshop units.

The Act provides for the admission of patients to hospitals approved for the purpose, either on referral by a medical practitioner or by order of a Justice of the Peace supported by the referral of a medical practitioner. A person so received into a hospital must be examined within seventy-two hours by the superintendent or another psychiatrist, and admission as a patient is dependent upon the result of the examination. Unless found to be in need of treatment, the person is required to leave the hospital. Special provisions exist for the detention for observation or treatment of persons admitted by order of a court or from a prison. The Act also provides for voluntary admissions. A person not less than eighteen years of age may be granted admission on his own request. Younger persons may be admitted on the application of a parent or guardian.

Except in the case of a person admitted by order of a court or from a prison, a patient may be released on leave or discharged by the hospital superintendent. A Board of Visitors or the Supreme Court of Western Australia may also, after due consideration, order the release of a patient. Where application for the discharge of a voluntary patient is made either by the patient himself or, in the case of a patient under the age of eighteen years, by the parent or guardian at whose request the patient was admitted, he must be discharged within seventy-two hours.

The principal institutions of the Mental Health Services are the Graylands Hospital and the Swanbourne Hospital. Other institutions include the Nathaniel Harper Homes for Children, Heathcote Hospital, Lemnos Hospital, Whitby Falls Hostel, Greenplace Hostel, Nedlands Hostel, the Community Development Centre, the Havelock Out-patient Clinic, the Bentley Out-patient Clinic, the Fremantle Out-patient Clinic, the Kalgoorlie Out-patient Clinic, the Geraldton Out-patient Clinic, the Mildred Creak Centre for Autistic Children, the Child Guidance Clinic, the Irrabearna Referral Centre, the Industrial Rehabilitation Unit and the sheltered workshop at North Fremantle. There are also the Pyrron Training Centre for the intellectually handicapped at Eden Hill and Mental Deficiency Division Hostels at Bassendean, Belmont, Dianella, Rivervale, Scarborough, Subiaco and Armadale.

The following table shows particulars concerning the mental health service units operated by the Mental Health Services authority during the year ended 30 June 1972.

MENTAL HEALTH SERVICES—YEAR ENDED 30 JUNE 1972

Particulars	Approved hospitals	Rehabilitation units	Hostels	Training centres	Out-patient clinics
Expenditure—					
Salaries and wages \$'000	4,791	190	410	1,150	878
Other \$'000	1,387	17	145	254	149
Total \$'000	6,177	207	556	1,404	1,028
Number of (a)—					
Units	3	3	9	2	8
Beds	1,314	....	254	180	....
Staff—					
Medical	25	....	....	....	22
Nursing and attendants	602	....	76	225	37
Other	511	41	42	113	108
Total	1,138	41	118	338	167
Patients at beginning of year	2,368	368	190	135	n.a.
Admissions	2,635	450	289	396	(b) 38,016
Discharges (c)	2,398	422	248	356	n.a.
Patients at end of year	2,605	396	231	175	(d) 11,102

n.a. denotes 'not applicable'.

(a) At 30 June. (b) Number of out-patient attendances. (c) Includes deaths. (d) Patients treated during the year.

The Australian Government is empowered by the *Mental Health and Related Services Assistance Act 1973* to provide financial assistance to States, local governing bodies and voluntary organisations in respect of services or facilities in relation to mental illness, mental disability, alcoholism and drug dependence. The Act came into operation on 27 November 1973 and replaces the *States Grants (Mental Health Institutions) Act 1964-1970* which expired on 30 June 1973.

CARE OF AGED AND DISABLED PERSONS

Part 5 of this Chapter gives particulars of pensions, allowances and some other benefits available to aged and disabled persons under the provisions of the Social Services Act, the Repatriation Act, the National Health Act and the Tuberculosis Act. Forms of assistance extended to such persons by other Commonwealth Acts are dealt with below.

Aged Persons Homes Act

Under the provisions of the *Aged Persons Homes Act 1954-1973* the Australian Government extends financial assistance to religious, charitable and other organisations in providing accommodation for the aged. The Act is administered, subject to any directions of the Minister, by the Director-General of Social Security.

Grants are made to organisations 'to encourage and assist the provision of suitable homes for aged persons, and in particular homes at which aged persons may reside in conditions approaching as nearly as possible normal domestic life ...'. For the purposes of the Act, the term 'aged person' means a man aged sixty-five years or over or a woman aged sixty years or over and includes the spouse of the aged person. The Act authorises grants to eligible organisations to be applied towards the cost of erecting or purchasing approved homes to be used permanently for the accommodation of aged persons. To be eligible for assistance an organisation must be one which is carried on otherwise than for the purpose of profit or gain to its individual members, and may be a religious, charitable or benevolent organisation, an organisation of former members of the defence forces, an organisation approved by the Governor-General, or a local governing body. An organisation conducted or controlled by the Australian Government or a State Government is not eligible for assistance.

When the original Act commenced on 16 December 1954 the grant was made on the basis of \$1 for each \$1 raised by the organisation excluding borrowed money and money received from a governmental body. An amending Act, operative from 22 October 1957, increased the Government's contribution to \$2 for each \$1 raised by the organisation. Grants are made from moneys appropriated by the Parliament from the Consolidated Revenue Fund.

AGED PERSONS HOMES GRANTS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Grants approved (a)— Number	24	18	25	31	30
Persons accommodated— Type of accommodation—					
Self-contained	247	326	354	314	313
Hostel	235	97	207	182	108
Nursing	14	85	205	161	41
Total persons	496	508	766	657	462
Amount	\$'000 1,855	\$'000 2,019	\$'000 3,335	\$'000 3,001	\$'000 2,576

(a) A supplementary grant may be approved in a year subsequent to the year when the original grant was approved. In this table each supplementary grant has been included in the year in which the additional amount was actually approved.

Personal Care Subsidy. An amendment to the Act operative from 10 October 1969 provides for payment of a Personal Care Subsidy to approved homes. Homes eligible for the subsidy are those where residents are provided with all meals and where staff is employed to assist residents who need help with bathing, dressing, personal laundry and the cleaning of their rooms, and those who need help with medication.

The *Aged Persons Homes Act* 1973, operative from 13 November 1973, authorises the payment of subsidy at the rate of \$12 per week in respect of each person residing in approved premises who has attained the age of eighty years or is receiving approved personal care services. Payments are made from the National Welfare Fund (see table on page 266).

PERSONAL CARE SUBSIDY—WESTERN AUSTRALIA

Particulars	1969-70	1970-71	1971-72	1972-73
Number of approved premises (a)	29	32	32	43
Number of qualified residents (a)	492	505	441	554
Amount of subsidy paid	\$ 89,020	\$ 123,260	\$ 143,780	\$ 277,500

(a) At 30 June.

Aged Persons Hostels Act

The *Aged Persons Hostels Act* 1972 came into operation on 27 September 1972 and is administered, subject to any directions of the Minister, by the Director-General of Social Security. Its purpose is to assist the provision of additional hostel-type accommodation for aged persons by making grants to organisations which satisfy certain conditions related to existing accommodation. The maximum grant payable is \$7,800 for each aged person or necessary staff member accommodated. No grant was made in Western Australia during the period from the commencement of the Act to 30 June 1973.

Delivered Meals Subsidy Act

The *Delivered Meals Subsidy Act* 1970-1973 is administered, subject to any directions of the Minister, by the Director-General of Social Security. Its purpose is to enable help to be given to approved organisations to establish, maintain, expand and improve services for the delivery of meals to aged and invalid persons. To qualify for approval, an organisation must conduct a regular service delivering meals wholly or mainly to aged or invalid persons in their homes.

The Act authorises payment of subsidy at the rate of 20 cents per meal, which is increased to 25 cents if the meal includes fresh fruit or fruit juice. Payments are made from the National Welfare Fund (see table on page 266).

Sheltered Employment (Assistance) Act

The *Sheltered Employment (Assistance) Act* 1967-1973 authorises the Australian Government to grant financial assistance towards the provision of sheltered employment and accommodation for certain disabled persons. The Act is administered, subject to any directions of the Minister, by the Director-General of Social Security.

The Act provides that grants may be made to eligible organisations, deemed by the Minister to provide employment for disabled persons, as assistance towards meeting the cost of the purchase, construction or alteration of approved premises or the purchase of land for the provision of sheltered employment; the purchase or construction of approved residential accommodation for persons engaged in sheltered employment; rent payable in respect of approved premises; and the purchase of approved equipment. The Act allows the payment of subsidy in respect of residential accommodation to be extended to include accommodation for disabled persons able to engage in normal employment. It also authorises the payment to organisations of a 'training fee' for each person who, after being employed for six months or longer in a sheltered workshop, has spent at least twelve months in normal employment. In addition, it provides for assistance towards the payment of salaries of certain staff associated with the training and accommodation of disabled persons.

SHELTERED WORKSHOPS GRANTS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of grants approved for—					
Workshop premises	3	1	1	5	4
Workshop equipment	9	19	38	47	51
Workshop rental	2	1	1	3	1
Residential units	1	2	1	5	1
Training fees .....	.....	.....	1	6	3
Salary subsidy .....	.....	.....	30	73	6
Total	15	23	72	139	66
Amount of grants approved for—	\$	\$	\$	\$	\$
Workshop premises	225,520	74,279	21,933	144,027	42,087
Workshop equipment	25,853	27,244	60,566	42,835	55,726
Workshop rental	2,552	2,686	3,062	4,185	6,252
Residential units	152,567	82,001	9,323	277,593	14,789
Training fees .....	.....	.....	500	3,000	1,500
Salary subsidy .....	.....	.....	30,020	57,374	11,265
Total	406,492	186,210	125,404	529,014	131,619

Sheltered Employment Allowances

Sheltered employment allowances, which were introduced in terms of the *Social Services Act* 1967, enable invalid pensioners and certain other disabled persons to earn an income from sheltered employment, and at the same time to be eligible to receive a special allowance which, in the case of an invalid pensioner, replaces the pension.

Handicapped Children (Assistance) Act

The *Handicapped Children (Assistance) Act* 1970-1973 provides for subsidies to be paid by the Australian Government to eligible organisations towards the capital cost of premises to be used for the training of handicapped children; the cost of equipment to be used for or in connection with such training; and the capital cost of residential accommodation for handicapped children receiving training. For the purposes of the Act a handicapped child is a person suffering from a physical or mental disability who is aged under twenty-one years, or has attained the age of twenty-one years but continues to receive approved training which was commenced before attaining that age. The Act is administered, subject to any directions of the Minister, by the Director-General of Social Security.

Grants towards the capital cost of premises or equipment are limited to two-thirds of the capital cost, or twice the sum which the organisation contributes from its own funds, whichever is the less.

The general purpose of the scheme is to help organisations to provide special facilities to enable training and accommodation to be provided for handicapped children. In many cases it is expected that the training will result in the children eventually engaging fully in the social and economic life of the community. Some will be helped to prepare for entry to sheltered employment, and to that extent the scheme may be regarded as complementary to the assistance programme for sheltered workshops. Other children will be assisted to achieve a greater measure of personal independence than would otherwise have been possible.

HANDICAPPED CHILDREN ASSISTANCE GRANTS WESTERN AUSTRALIA

Particulars	1970-71	1971-72	1972-73
Number of grants approved for—			
Training centres	1	....	7
Equipment ....	....	2	....
Accommodation centres ....	....	....	....
Total	1	2	7
	\$	\$	\$
Amounts of grants approved for—			
Training centres	80,071	....	....
Equipment ....	....	6,603	6,288
Accommodation centres ....	....	....	....
Total	80,071	6,603	6,288

Other Forms of Assistance

Under a set of Acts passed in 1969 the Australian Government extends financial assistance to the States for the development of a range of home care services, senior citizens' centres and nursing homes, mainly for the aged, and the construction of self-contained dwelling units for certain single aged pensioners. These Acts, all of which provide assistance commencing with the financial year 1969-70, are the *States Grants (Home Care) Act 1969-1973*, the *States Grants (Paramedical Services) Act 1969*, the *States Grants (Nursing Homes) Act 1969* and the *States Grants (Dwellings for Aged Pensioners) Act 1969*.

Under the *States Grants (Home Care) Act* the Australian Government shares with a State on a \$2 for \$1 basis the cost of approved housekeeping or other domestic services provided wholly or mainly for aged persons in their homes. It also shares with a State the cost of providing approved senior citizens' centres, on a \$2 for \$1 basis up to a maximum of two-thirds of the capital cost of the centres, as well as paying two-thirds of the salary of a welfare officer engaged in the co-ordination of home care services and associated with a senior citizens' centre. Grants to Western Australia were first made in the year 1970-71, details of amounts paid to 1972-73 being given in the following table.

HOME CARE SERVICES GRANTS WESTERN AUSTRALIA

Particulars	1970-71	1971-72	1972-73
	\$	\$	\$
Amount of grants paid for—			
Home care services	3,500	10,000	12,500
Senior citizens' centres ....	....	30,244	67,252
Welfare officers ....	....	....	5,475
Total	3,500	40,244	85,227

The *States Grants (Paramedical Services) Act* authorises the Australian Government to share with a State on a \$1 for \$1 basis the cost of approved paramedical services, such as chiropody, occupational therapy, physiotherapy and speech therapy, provided wholly or

mainly for aged persons in their homes. Payments are made from the Consolidated Revenue Fund and the maximum annual expenditure authorised by the Act is \$250,000, of which \$19,000 is payable to Western Australia. In the period to 30 June 1973, no grant had been made to Western Australia.

The States Grants (Nursing Homes) Act provides for the Australian Government to share with a State on a \$1 for \$1 basis the capital costs of approved nursing homes wholly or mainly for aged persons of limited means. The Act stipulates that the Australian Government's contribution during the five-year period ending 30 June 1974 shall not exceed \$5 million, Western Australia's share being a maximum of \$381,000. Grants are made from the Consolidated Revenue Fund. Payments to Western Australia commenced in 1970-71, when an amount of \$337,000 was received. The remaining amount of \$44,000 was received in 1971-72.

The States Grants (Dwellings for Aged Pensioners) Act authorises the Australian Government to share with a State on a \$1 for \$1 basis the cost of providing self-contained dwellings at reasonable rentals for certain recipients of an age pension payable under the Social Services Act or a service pension under the Repatriation Act. Expenditure by the Australian Government during the five-year period to 30 June 1974 is limited to \$25 million, Western Australia's share being \$1.75 million. Payments are made from the Consolidated Revenue Fund. The first grant to Western Australia, amounting to \$700,000, was made in 1970-71, and further amounts of \$224,555 and \$518,815 were received in 1971-72 and 1972-73.

Chapter V—continued

Part 4—Housing and Building

HOUSING AND THE CENSUS

NOTE. Before an amendment to the Australian Constitution in 1967, dwellings occupied solely by full-blood Aborigines were excluded from published tables relating to the Census of Population and Housing (see letterpress Aborigines on page 121). As a result of this amendment, such dwellings are included in the statistics derived from the Census of 30 June 1971, which therefore relate to all dwellings. It has been possible to compile some data from the 1966 Census on this basis and particulars have been incorporated, as appropriate, in the tables on the following pages.

The definitions given below are relevant when considering data derived from the Census of Population and Housing.

OCCUPIED DWELLING. For the purpose of the Census of Population and Housing an occupied dwelling is any habitation occupied on Census night by a household group living together as a domestic unit, and may comprise the whole of a building or only part of it. The term has therefore a very wide reference and includes, in addition to houses and flats, a great variety of dwellings ranging from a single-roomed shack to a multi-roomed hotel or institution.

UNOCCUPIED PRIVATE DWELLING. An unoccupied private dwelling is defined as a structure built specifically for private living purposes and capable of being lived in, though unoccupied at the time of the Census. The term includes vacant dwellings available for sale or renting; dwellings such as week-enders or holiday homes which were not occupied on Census night; dwellings normally occupied but whose occupants were temporarily absent on the night of the Census; newly-completed dwellings whose owners or tenants had not entered into occupation on Census night; and dwellings described as 'to be demolished', 'condemned', 'exhibition home', etc. The total number of unoccupied dwellings does not, therefore, represent the number of vacant houses and flats available for sale or renting.

PRIVATE DWELLINGS comprise the following classes:

PRIVATE HOUSE, which includes separate houses; semi-detached houses; attached houses; terrace or row houses; and villa units or town houses.

SELF-CONTAINED FLAT. A self-contained flat is part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities. Home units are included in this class.

OTHER FLAT is part of a house, flat or other premises which is not self-contained.

OTHER PRIVATE DWELLINGS include sheds, tents, garages, caravans, houseboats, etc. occupied on a permanent or semi-permanent basis.

Dwellings at Censuses from 1901

The following table shows the numbers of occupied and unoccupied dwellings recorded in Western Australia at each Census from 1901 to 1971. It should be noted that the number of unoccupied dwellings shown for censuses prior to 1971 include both private and non-private dwellings, while those for the 1971 Census refer to private dwellings only.

DWELLINGS—CENSUSES, 1901 TO 1971(a)

Census date	Occupied dwellings				Unoccupied dwellings
	Private		Non-private	Total	
	Number	Average number of inmates			
1901—31 March	(b) 46,436	(c) 3.35	2,070	48,506	2,263
1911—3 April	(d) 66,553	(e) 3.68	2,317	68,870	3,158
1921—4 April	70,185	4.11	3,363	73,548	3,274
1933—30 June	100,441	3.95	3,137	103,578	4,029
1947—30 June	122,078	3.73	2,689	124,767	2,606
1954—30 June	159,496	3.64	3,327	162,823	6,614
1961—30 June	191,616	3.59	2,701	194,317	13,705
1966—30 June	222,416	3.53	3,285	225,701	17,965
1971—30 June	284,359	3.38	(f) 2,486	286,845	(g) 28,274

(a) Figures for Censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for 1966 and 1971 relate to all dwellings (see NOTE on page 210). (b) Comprises 17,702 dwellings of calico, canvas, and hessian, with an average of 2.10 inmates, and 28,734 other dwellings with an average of 4.12 inmates. (c) See note (b). (d) Comprises 14,216 dwellings of calico, canvas, and hessian, with an average of 1.93 inmates, and 52,337 other dwellings with an average of 4.16 inmates. (e) See note (d). (f) For further details see next table. (g) Unoccupied private dwellings only.

Class of Dwelling

The following table shows the number of occupied dwellings in Western Australia according to class of dwelling at the Census of 30 June 1971. Private houses constituted 87.8 per cent of all occupied private dwellings in 1971 compared with 90.4 per cent in 1966. The proportion of self-contained flats to total occupied private dwellings increased from 6.33 per cent in 1966 to 8.96 per cent in 1971.

DWELLINGS ACCORDING TO CLASS—CENSUS, 30 JUNE 1971

Class of dwelling	Perth Statistical Division	Other Divisions	Total
Occupied dwellings—			
Private dwellings—			
Separate house	160,809	70,169	230,978
Semi-detached house	10,822	1,834	12,656
Attached house	1,099	1,049	2,148
Terrace or row house	1,721	266	1,987
Villa unit or town house	1,296	629	1,925
Total, Private houses	175,747	73,947	249,694
Self-contained flat or home unit	23,380	2,093	25,473
Other flat	1,908	475	2,383
Other private dwellings	984	5,825	6,809
Total, Private dwellings	202,019	82,340	284,359
Non-private dwellings—			
Hotel, motel			572
Staff quarters			630
Boarding house			618
Boarding school			44
Residential college			33
Hospital other than mental hospital	n.a.	n.a.	148
Nursing home			84
Home for the aged			30
Aboriginal mission settlement			68
Convent, monastery, etc.			92
Prison			43
Other non-private dwellings			124
Total, Non-private dwellings	988	1,498	2,486
Total, Occupied dwellings	203,007	83,838	286,845
Unoccupied private dwellings—			
Private house	9,382	13,626	23,008
Self-contained flat	3,920	558	4,478
Other	394	394	788
Total, Unoccupied private dwellings	13,696	14,578	28,274

n.a. denotes 'not available'.

The following table gives particulars of the numbers of occupied dwellings at the Censuses of 1966 and 1971, together with the total numbers of persons enumerated. Of the total of 1,026,734 persons enumerated in private and non-private dwellings at the Census of 30 June 1971, 86·2 per cent were in private houses, 5·28 per cent in self-contained flats, 2·28 per cent in other private dwellings, and 6·28 per cent in non-private dwellings. The corresponding percentages in 1966 were 87·5, 3·54, 2·12, and 6·80.

Between the Censuses of 1966 and 1971, the numbers of occupied dwellings in the State increased by 27·09 per cent. Private houses showed an increase of 48,531 or 24·13 per cent and self-contained flats an increase of 11,392 or 80·90 per cent.

OCCUPIED DWELLINGS AND PERSONS ENUMERATED CENSUSES, 1966 AND 1971

Particulars	Census, 30 June 1966		Census, 30 June 1971					
	Western Australia		Perth Statistical Division	Other Divisions	Western Australia			
	Number	Per cent of total	Number	Number	Number	Per cent of total	Increase or decrease(a) since 1966	
							Number	Per cent
OCCUPIED DWELLINGS								
Occupied dwellings—								
Private dwellings—								
Private houses	201,163	89·13	175,747	73,947	249,694	87·05	48,531	24·13
Self-contained flats	14,081	6·24	23,380	2,093	25,473	8·88	11,392	80·90
Other private dwellings	7,172	3·18	2,392	6,300	9,192	3·20	2,020	28·17
Total, Private dwellings	222,416	98·54	202,019	82,340	284,359	99·13	61,943	27·85
Non-private dwellings	3,285	1·46	988	1,498	2,486	0·87	—799	—24·32
Total, Occupied dwellings	225,701	100·00	203,007	83,838	286,845	100·00	61,144	27·09
PERSONS ENUMERATED								
Persons enumerated in—								
Private dwellings—								
Private houses	737,943	87·01	618,427	266,237	884,664	85·85	146,721	19·88
Self-contained flats	29,854	3·52	49,678	4,531	54,209	5·26	24,355	81·58
Other private dwellings	17,844	2·10	5,405	17,962	23,367	2·27	5,523	30·95
Total, Private dwellings	785,641	92·64	673,510	288,730	962,240	93·38	176,599	22·48
Non-private dwellings	57,340	6·76	n.a.	n.a.	64,494	6·26	7,154	12·48
Total, Occupied dwellings	842,981	99·40	n.a.	n.a.	1,026,734	99·64	183,753	21·80
Persons enumerated elsewhere—								
Campers-out	2,080	0·25	n.a.	n.a.	1,118	0·11	—962	—46·25
Migratory population (b)	3,039	0·36	n.a.	n.a.	2,617	0·25	—422	—13·89
Total population	848,100	100·00	703,199	324,653	1,030,469	100·00	182,369	21·50

n.a. denotes 'not available'.

(a) Minus sign (—) denotes decrease. (b) Comprises persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

Number of Inmates

Details of the number of inmates in private houses and self-contained flats at the Census of 30 June 1971 are given in the next table.

At the 1971 Census, 87·1 per cent of occupied private houses in Western Australia had less than six inmates, and 88·8 per cent of occupied self-contained flats had less than four inmates.

The average number of inmates was 3·54 for private houses compared with 2·13 for self-contained flats.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF INMATES (a): CENSUS, 30 JUNE 1971

Number of inmates per house or flat	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
1	16,703	7,624	24,327	7,230	675	7,905
2	42,645	17,286	59,931	9,913	857	10,770
3	31,845	13,229	45,074	3,632	304	3,936
4	37,418	14,415	51,833	1,692	132	1,824
5	25,792	10,620	36,412	625	79	704
6	12,816	5,959	18,775	207	26	233
7	5,167	2,629	7,796	61	11	72
8 and over	3,361	2,185	5,546	20	9	29
Total houses, flats	175,747	73,947	249,694	23,380	2,093	25,473
Total inmates	618,427	266,237	884,664	49,678	4,531	54,209
Average number of inmates	3.52	3.60	3.54	2.12	2.16	2.13

Number of Rooms

A comparison of the number of rooms in private houses and self-contained flats at the Censuses of 1966 and 1971 is made in the following table.

Occupied private houses containing five rooms were the most numerous group in Western Australia at both the 1966 and 1971 Censuses, comprising respectively 42.8 per cent and 45.5 per cent of the total. In 1971, 91.8 per cent of occupied self-contained flats had less than five rooms, compared with 85.5 per cent in 1966.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF ROOMS: CENSUSES, 1966 AND 1971

Number of rooms (a) per house or flat	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
1	194	322	332	654	282	1,338	57	1,395
2	1,608	1,555	1,051	2,606	2,869	6,755	397	7,152
3	6,000	7,718	3,571	11,289	4,835	8,261	867	9,128
4	34,821	30,407	13,812	44,219	4,058	5,226	484	5,710
5	86,146	82,069	31,554	113,623	1,393	1,348	152	1,500
6	45,104	35,659	15,008	50,667	404	258	45	303
7 and over	27,290	18,017	8,619	26,636	240	194	91	285
Total houses, flats	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) Includes kitchen and permanently enclosed sleep-out, but does not include bathroom, toilet, pantry, laundry, storeroom, hall, or room used only for business purposes.

Material of Outer Walls

Brick predominated as the material of outer walls of occupied private dwellings in Western Australia at both the 1966 and 1971 Censuses, representing 44.4 per cent of private houses and 78.6 per cent of self-contained flats in 1966, and 53.1 per cent and 89.5 per cent in 1971. Fibro-cement was next in importance, being used in 30.5 per cent of private houses in 1966 and 22.8 per cent in 1971. The proportion of private houses with outer walls of timber rose from 13.1 per cent in 1966 to 13.6 per cent in 1971.

In 1971, 67.9 per cent of private houses in the Perth Statistical Division had outer walls of brick whereas in other Divisions the proportion was 18.0 per cent, the predominant material outside the Perth Statistical Division being fibro-cement with 42.4 per cent.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
MATERIAL OF OUTER WALLS: CENSUSES, 1966 AND 1971**

Material of outer walls	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
Brick	89,377	119,334	13,300	132,634	11,070	21,716	1,083	22,799
Brick veneer	10,938	10,518	4,269	14,787	231	232	78	310
Stone	3,090	1,804	1,537	3,341	244	165	47	212
Concrete	4,666	1,417	1,134	2,551	412	596	75	671
Timber	26,294	16,311	17,652	33,963	568	262	230	492
Metal	4,204	547	3,756	4,303	181	16	97	113
Fibro-cement	61,343	25,507	31,361	56,868	1,364	375	473	848
Other	1,251	309	938	1,247	11	18	10	28
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

Nature of Occupancy

The nature of occupancy of private houses and self-contained flats at the Censuses of 1966 and 1971 is compared in the following table.

At the 1971 Census, nature of occupancy was stated in respect of 245,758 occupied private houses and 24,845 occupied self-contained flats. Of the houses, 70.0 per cent were stated to be occupied by owners including purchasers by instalments, 8.60 per cent by tenants of government authorities, and 17.9 per cent by other tenants. The corresponding percentages for flats were 12.2, 11.0, and 74.5.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NATURE OF OCCUPANCY: CENSUSES, 1966 AND 1971**

Nature of occupancy	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-con- tained flats	Perth Statistical Division	Other Divisions	Total
Owner (a)	150,542	129,022	43,123	172,145	1,880	2,794	234	3,028
Tenant of government authority	16,206	14,049	7,090	21,139	1,113	2,656	79	2,735
Other tenant	29,672	27,452	16,568	44,020	10,702	16,960	1,545	18,505
Other methods of occupancy (b)	3,899	5,224	7,166	8,454	309	970	235	577
Not stated	844			3,936	77			628
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) Including purchaser by instalments.

(b) Including caretaker.

Facilities

At the 1971 Census the question on gas and electricity facilities was answered in respect of 281,843 occupied private dwellings in Western Australia. Of this total, 0.34 per cent had gas only, 59.7 per cent had electricity only, 39.3 per cent had both gas and electricity, and 0.66 per cent had neither gas nor electricity. There were 216,063 dwellings with a television set, equivalent to 76.0 per cent of all occupied private dwellings. Of the total number of private dwellings with a television set, 164,511 (76.1 per cent) were in the Perth Statistical Division.

In the following table information is shown for private houses and self-contained flats at the Censuses of 1966 and 1971.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS FACILITIES: CENSUSES, 1966 AND 1971

Facilities	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total, private houses	Perth Statistical Division	Other Divisions	Total	Total, self-contained flats	Perth Statistical Division	Other Divisions	Total
Gas only	731	100	346	446	22	20	4	24
Electricity only	126,765	116,594	40,359	156,953	5,265	8,145	1,286	9,431
Gas and electricity	70,423	58,312	31,819	90,131	8,733	14,979	751	15,730
Neither gas nor electricity	2,744	117	713	830	20	11	1	12
Not stated	500	624	710	1,334	41	225	51	276
Total	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473
Television set	142,557	147,932	49,670	197,602	8,130	15,427	1,008	16,435

Motor Vehicles

At the 1971 Census the question on motor vehicles was answered in respect of 278,922 occupied private dwellings in Western Australia. Of this total, 15·6 per cent had no vehicle, 50·3 per cent had one vehicle, 25·3 per cent had two vehicles, and 8·73 per cent had more than two vehicles.

In the following table information is shown for private houses and self-contained flats at the Censuses of 1966 and 1971.

OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS NUMBER OF MOTOR VEHICLES (a): CENSUSES, 1966 AND 1971

Number of motor vehicles (a)	Private house				Self-contained flat			
	Census, 30 June—				Census, 30 June—			
	1966	1971			1966	1971		
	Total private houses	Perth Statistical Division	Other Divisions	Total	Total self-contained flats	Perth Statistical Division	Other Divisions	Total
No vehicle	35,498	25,280	8,228	33,508	4,875	6,983	513	7,496
1 vehicle	106,481	87,351	34,559	121,910	7,329	13,058	1,163	14,221
2 vehicles	41,384	47,741	19,222	66,963	1,265	2,361	256	2,617
3 or more vehicles	14,972	12,962	10,537	23,499	223	388	70	458
Not stated	2,828	2,413	1,401	3,814	389	590	91	681
Total houses, flats	201,163	175,747	73,947	249,694	14,081	23,380	2,093	25,473

(a) At the 1966 Census, householders were asked to state 'the number of Motor Vehicles (excluding Motor Cycles and Scooters) used by members of this household that were garaged or parked at or near this dwelling for the night of Thursday, 30th June'. At the 1971 Census, they were asked: 'How many motor vehicles owned or driven by members of your household were garaged or parked at or near this dwelling for the night of Wednesday 30 June 1971? Exclude motor cycles, scooters, tractors. Include company vehicles kept at home.'

Number of Bedrooms

The question concerning number of bedrooms was included in the census schedule in 1971 for the first time. The question was answered in respect of 281,114 occupied private dwellings in Western Australia. Of this number, 6,792 (including one-room apartments and bed-sitting rooms), equivalent to 2·42 per cent, were classified as having no bedroom, 7·26 per cent had one bedroom, 24·2 per cent had two bedrooms, 52·0 per cent had three, 12·0 per cent had four, and 2·12 per cent had five or more bedrooms.

Details for private houses and self-contained flats are given in the following table.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
NUMBER OF BEDROOMS (a): CENSUS, 30 JUNE 1971**

Number of bedrooms (a)	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
0 (b)	578	386	964	1,729	73	1,802
1	4,993	2,615	7,608	9,730	753	10,483
2	40,231	15,669	55,900	10,097	939	11,036
3	103,933	40,368	144,301	1,341	180	1,521
4	21,772	11,869	33,641	107	34	141
5 and over	3,339	2,335	5,674	71	56	127
Not stated....	901	705	1,606	305	58	363
Total	175,747	73,947	249,694	23,380	2,093	25,473

(a) Includes permanently enclosed sleep-out.

(b) Includes one-room apartment and bed-sitting room.

Method of Sewage Disposal

The question concerning method of sewage disposal was included in the census schedule in 1971 for the first time. Of the total of 284,359 occupied private dwellings in Western Australia, 101,468 (35·7 per cent) had a flush toilet connected to a public sewer; 170,455 (59·9 per cent) had a flush toilet connected to an individual system, such as septic tank; 4,198 (1·48 per cent) were serviced by sanitary pan collection; and 8,238 (2·90 per cent) were classified to the category 'Other and not stated'.

**OCCUPIED PRIVATE HOUSES AND SELF-CONTAINED FLATS
METHOD OF SEWAGE DISPOSAL: CENSUS, 30 JUNE 1971**

Method of sewage disposal	Private house			Self-contained flat		
	Perth Statistical Division	Other Divisions	Total	Perth Statistical Division	Other Divisions	Total
Mains sewer	66,932	12,504	79,436	18,801	859	19,660
Separate system	107,092	55,367	162,459	4,029	1,150	5,179
Sanitary pan	371	3,352	3,723	11	25	36
Other and not stated	1,352	2,724	4,076	539	59	598
Total	175,747	73,947	249,694	23,380	2,093	25,473

Unoccupied Dwellings

For dwellings not occupied on the night of the census, collectors were required to determine as many particulars as possible and, where the information was available, to enter on the census schedule the reason why the dwelling was unoccupied. That this information could not be ascertained in a high proportion of cases is evident from the numbers shown in the following table in the category 'Other and not stated', equivalent to 38·2 per cent of all unoccupied private dwellings in 1966 and 17·3 per cent in 1971.

UNOCCUPIED PRIVATE DWELLINGS—CENSUSES, 1966 AND 1971

Reason for being unoccupied	Census, 30 June—			
	1966	1971		
	Total, unoccupied private dwellings	Perth Statistical Division	Other Divisions	Total
For sale, to let	1,834	5,133	2,364	7,497
Newly built	662	1,026	476	1,502
Vacant for repair	289	468	379	847
Holiday home	4,796	1,972	4,548	6,520
Temporarily vacant	3,218	3,768	3,262	7,030
Other and not stated	6,668	1,327	3,551	4,878
Total	17,467	13,694	14,580	28,274

Geographical Distribution of Dwellings

Statistical Divisions. The following tables show the numbers and proportions of occupied dwellings in each of the Statistical Divisions of Western Australia at each Census from 1911 to 1971, and a dissection according to class of dwelling at the Census of 1971. (The Statistical Divisions and their component local government areas are shown on the maps which precede the *Index*.)

Between the Censuses of 1966 and 1971 the number of occupied dwellings in Western Australia rose by 27·1 per cent. The number in the Perth Statistical Division increased by 30·9 per cent, compared with an increase of 18·6 per cent in the rest of the State. Other Divisions showing an increase were Pilbara, 328 per cent; North-West, 62·0 per cent; Kimberley, 42·1 per cent; Eastern Goldfields, 23·3 per cent; Central, 22·5 per cent; Northern Agricultural, 17·3 per cent; South-West, 13·6 per cent; and Southern Agricultural, 7·30 per cent. A decrease of 1·37 per cent was recorded in the Central Agricultural Division.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CENSUSES, 1911 TO 1971 (a)
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division (b)	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
Perth Statistical Division	24,358	35,190	53,394	74,478	102,745	129,488	155,029	203,007
Other Divisions—								
South-West	7,381	8,319	12,544	13,611	17,336	18,714	19,718	22,391
Southern Agricultural	3,903	4,654	6,410	6,522	9,159	10,775	11,714	12,569
Central Agricultural	8,115	9,026	12,352	10,872	13,378	14,097	14,579	14,379
Northern Agricultural	2,953	3,846	5,963	5,691	7,403	8,338	9,395	11,020
Eastern Goldfields	17,058	9,808	9,271	10,614	9,607	9,389	9,323	11,494
Central	3,261	1,344	2,247	1,628	1,205	1,015	1,068	1,308
North-West	416	389	526	506	749	922	1,687	2,733
Pilbara	856	414	323	322	564	643	1,187	5,084
Kimberley	569	558	548	523	677	936	2,013	2,860
Total	44,512	38,358	50,184	50,289	60,078	64,829	70,684	83,838
WESTERN AUSTRALIA	68,870	73,548	103,578	124,767	162,823	194,317	225,713	286,845

(a) Figures for Censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for the Censuses of 1966 and 1971 relate to all dwellings (see *NOTE* on page 210). (b) For component local government areas, see maps preceding the *Index*.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CENSUSES, 1911 TO 1971 (a)
PERCENTAGE DISTRIBUTION
(Figures compiled on the basis of the 1971 boundaries)

Statistical Division (b)	Census date							
	1911 3 April	1921 4 April	1933 30 June	1947 30 June	1954 30 June	1961 30 June	1966 30 June (a)	1971 30 June (a)
Perth Statistical Division	35·37	47·85	51·55	59·69	63·10	66·64	68·68	70·77
Other Divisions—								
South-West	10·72	11·31	12·11	10·91	10·65	9·63	8·74	7·81
Southern Agricultural	5·67	6·33	6·19	5·23	5·63	5·55	5·19	4·38
Central Agricultural	11·78	12·27	11·93	8·71	8·22	7·25	6·46	5·01
Northern Agricultural	4·29	5·23	5·76	4·56	4·55	4·29	4·16	3·84
Eastern Goldfields	24·77	13·34	8·95	8·51	5·90	4·83	4·13	4·01
Central	4·74	1·83	2·17	1·30	0·74	0·52	0·47	0·46
North-West	0·60	0·53	0·51	0·41	0·46	0·47	0·75	0·95
Pilbara	1·24	0·56	0·31	0·26	0·35	0·33	0·53	1·77
Kimberley	0·83	0·76	0·53	0·42	0·42	0·48	0·89	1·00
Total	64·63	52·15	48·45	40·31	36·90	33·36	31·32	29·23
WESTERN AUSTRALIA	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

(a) Figures for Censuses prior to 1966 exclude dwellings occupied solely by full-blood Aborigines; those for the Censuses of 1966 and 1971 relate to all dwellings (see *NOTE* on page 210). (b) For component local government areas, see maps preceding the *Index*.

OCCUPIED DWELLINGS IN STATISTICAL DIVISIONS—CLASS OF DWELLING CENSUS, 30 JUNE 1971

Statistical Division (a)	Private dwellings				Non-private dwellings	Total occupied dwellings
	Private house	Self-contained flat	Other	Total		
Perth Statistical Division	175,747	23,380	2,892	202,019	988	203,007
Other Divisions—						
South-West	21,241	573	380	22,194	197	22,391
Southern Agricultural	11,717	257	454	12,428	141	12,569
Central Agricultural	13,591	178	404	14,173	206	14,379
Northern Agricultural	9,969	256	613	10,838	182	11,020
Eastern Goldfields	9,722	358	1,140	11,220	274	11,494
Central	919	15	305	1,239	69	1,308
North-West	1,780	97	778	2,655	78	2,733
Pilbara	3,314	315	1,274	4,903	181	5,084
Kimberley	1,694	44	952	2,690	170	2,860
Total	73,947	2,093	6,300	82,340	1,498	83,838
WESTERN AUSTRALIA	249,694	25,473	9,192	284,359	(b) 2,486	286,845

(a) For component local government areas, see maps preceding the *Index*.
according to class of dwelling see page 211.

(b) For dissection

Australian States. The following table gives a dissection according to class of dwellings recorded in each of the Australian States and in Australia as a whole at the Census of 30 June 1971.

DWELLINGS ACCORDING TO CLASS—AUSTRALIAN STATES: CENSUS, 30 JUNE 1971

Class of dwelling	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia (a)
Occupied dwellings—							
Private dwellings—							
Private house	1,092,355	869,936	444,661	320,058	249,694	99,396	3,119,589
Self-contained flat	225,549	120,857	49,313	16,569	25,473	8,417	453,083
Other private dwellings	38,629	19,393	18,626	5,437	9,192	1,784	97,881
Total, Private dwellings	1,356,533	1,010,186	512,600	342,064	284,359	109,597	3,670,553
Non-private dwellings	8,009	5,299	4,645	2,048	2,486	823	24,006
Total, Occupied dwellings	1,364,542	1,015,485	517,245	344,112	286,845	110,420	3,694,559
Unoccupied dwellings	124,522	88,521	51,077	30,553	28,274	13,307	339,057

(a) Includes Northern Territory (17,282 occupied private dwellings and 510 occupied non-private dwellings) and Australian Capital Territory (37,932 occupied private dwellings and 186 occupied non-private dwellings).

In the following table occupied dwellings recorded in each State and Territory at the 1971 Census are classified as *Major Urban*, *Other Urban* or *Rural* in accordance with the criteria outlined on page 128.

OCCUPIED DWELLINGS (a)—MAJOR URBAN, OTHER URBAN, AND RURAL (b) STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

State or Territory	Urban			Rural	Total
	Major	Other	Total		

NUMBER OF DWELLINGS

New South Wales	959,230	261,851	1,221,081	143,461	1,364,542
Victoria	738,006	161,163	899,169	116,316	1,015,485
Queensland	238,784	179,053	417,837	99,408	517,245
South Australia	242,183	52,133	294,316	49,796	344,112
Western Australia	186,845	51,800	238,645	48,200	286,845
Tasmania	37,246	44,732	81,978	28,442	110,420
Northern Territory	...	12,198	12,198	5,594	17,792
Australian Capital Territory	37,280	...	37,280	838	38,118
AUSTRALIA	2,439,574	762,930	3,202,504	492,055	3,694,559

OCCUPIED DWELLINGS (a)—MAJOR URBAN, OTHER URBAN, AND RURAL (b)
STATES AND TERRITORIES: CENSUS, 30 JUNE 1971—continued

State or Territory	Urban			Rural	Total
	Major	Other	Total		
PERCENTAGE DISTRIBUTION					
New South Wales	70.30	19.19	89.49	10.51	100.00
Victoria	72.68	15.87	88.55	11.45	100.00
Queensland	46.16	34.62	80.78	19.22	100.00
South Australia	70.38	15.15	85.53	14.47	100.00
Western Australia	65.14	18.06	83.20	16.80	100.00
Tasmania	33.73	40.51	74.24	25.76	100.00
Northern Territory	68.56	68.56	68.56	31.44	100.00
Australian Capital Territory	97.80	...	97.80	2.20	100.00
AUSTRALIA	66.03	20.65	86.68	13.32	100.00

(a) Private and non-private.

(b) See page 128 for definitions of *Major Urban*, *Other Urban*, and *Rural*.

GOVERNMENT AND GOVERNMENT-SPONSORED HOUSING

The State Housing Commission

The State Housing Commission was established in January 1947 under the State Housing Act of 1946 to replace the Workers' Homes Board which had been created in 1912 to 'erect and dispose of workers' dwellings, and to make advances to people of limited means to provide homes for themselves'. The Act confers on the Commission the legal authority formerly vested in the Board and has as its objects 'the improvement of existing housing conditions' and 'the provision of adequate and suitable housing accommodation for persons of limited means and certain other persons not otherwise adequately housed'. The legislation is comprehensive in scope, providing for the erection of homes for workers, the making of advances to workers for the purchase of homes, the erection of homes for letting on a weekly rental basis, the acquisition and development of land, the clearing of slums, the erection of hostels and the planning of community facilities.

The Commission consists of seven members of whom one must be the person occupying the office of General Manager of the Commission, one an officer of the State Public Service, one a representative of the building trades unions, one a registered builder (or a person qualified to be so registered), one a woman, one a discharged member of the Forces, and one a person with a wide knowledge of and experience in housing conditions in the State. The functions of the Commission include the State-wide provision of low-cost housing for purchase or rental by families of low and moderate income, under the authority of the State Housing Act and of the Housing Agreement Act (Commonwealth) which, on 1 July 1973, replaced the States Grants (Housing) Act (Commonwealth); the administration of the Building Societies Act and the Housing Loan Guarantee Act; and the construction and maintenance of dwellings on behalf of the Government Employees' Housing Authority. Tables showing the operations of the Commission are shown on page 222.

State Housing Act. Under the authority of the *State Housing Act, 1946-1973*, the State Housing Commission uses funds provided by the State Government to build dwellings for sale and to lend money for home building. Eligibility for assistance is restricted to persons with income below a prescribed amount, which varies according to changes in industrial awards affecting the earnings of a tradesman, but outside the Perth metropolitan region the Minister may allow assistance to a family having a higher income. Loans of up to \$9,000 (or more, in some cases) may be made on a minimum deposit of \$200 including the ingoing fees (or less, at the discretion of the Commission), the maximum period of repayment being forty-five years. The rate of interest (31 December 1973) is 5½ per cent per annum reducible.

Various forms of assistance have been granted to encourage home ownership, including loans secured by mortgage, advances made under contract of sale, advances for acquiring homes under leasehold conditions, second mortgage loans and loans for the completion of partly-built dwellings.

Commonwealth and State Housing Agreements. The final draft of an agreement on housing between the Commonwealth and State Governments was prepared at the Conference of Premiers in August 1945 and was later ratified by Commonwealth and State legislation. The Commonwealth and State Housing Agreement Act, passed by the State Parliament in 1945, enabled Western Australia to participate in the Agreement, the purpose of which was to provide homes quickly, primarily for persons at the lower income levels, by standardisation of design and erection in large groups. The Agreement provided a broad basis of collaboration between the Commonwealth and the State with the Commonwealth providing advances of money, general direction on policy and co-ordination of effort and the State undertaking the actual site acquisition and planning, the construction of the dwellings, the selection of tenants and the detailed administrative work.

Further details of the 1945 Agreement are given on page 203 of the *Western Australian Year Book*, No. 8—1969 and in earlier issues.

With the expiry of the 1945 Agreement, the Commonwealth Parliament in 1956 passed the Housing Agreement Act providing 'financial assistance to the States for the purpose of housing' for a period of five years ending on 30 June 1961. The complementary State legislation authorising the State Government to enter into the Agreement was the Commonwealth and State Housing Agreement Act of 1956.

The 1956 Agreement required that, for the first two years of its operation, at least 20 per cent of the money allocated to the State was to be advanced to building societies and other approved institutions for lending to private persons for the building or purchase of homes, the proportion to be increased to not less than 30 per cent during the remainder of the period. The balance of the allocation was to be used by the State for the erection of houses for either rental or sale. The Commonwealth was entitled to specify that of this balance a portion not exceeding 5 per cent in any one year should be set aside for the erection of houses for serving members of the defence forces. The Commonwealth provided supplementary advances to the State equal to the amounts set aside for this purpose.

On the introduction of the 1956 Agreement, the State Housing Commission adopted the policy of offering for sale before occupancy one-half of the total number of houses built, the remainder being made available on a rental basis. The proportion was subsequently varied several times.

Under the provisions of Commonwealth and State legislation passed in 1961 the period of operation of the Commonwealth and State Housing Agreement was extended for a further five years to 30 June 1966. The 1961 Agreement incorporated all the main features of the earlier arrangement, with only minor modifications.

In terms of the *Housing Agreement Act 1966* (Commonwealth) and the *Commonwealth and State Housing Agreement Act, 1966* (State) the operation of the Agreement, with minor amendments, was extended until 30 June 1971 and it has not been renewed.

Although Agreements subsequent to that of 1945, and which were effective until 30 June 1971, made no provision for rebates to tenants unable to pay the full rental, the State Government continued the system during the period.

New arrangements were introduced from 1 July 1971 under the authority of the *States Grants (Housing) Act 1971*, which considerably altered the principles of the previous Agreements.

Under this legislation the States continued to determine the amount from their annual Loan Council borrowing programmes to be allocated to housing. Instead, however, of this amount being advanced to the States at a concessional rate of interest (as was the case under previous Agreements), the Commonwealth was to make cash grants of \$2.75 million a year payable for thirty years in respect of each year's housing programme over the period 1971-72 to 1975-76.

Certain conditions attached to payment of the grants which were to be shared among the States in proportions specified in the Act. Western Australia's share was 11·4 per cent or \$313,500 per annum over the period nominated, which became the years 1971-72 and 1972-73 in terms of the *States Grants (Housing) Act* 1971-1973. This Act continues the provision for payment of a rental assistance grant to help the States meet the cost to them of reducing the rents of housing authority dwellings for families considered to have insufficient means to pay the rents ordinarily required by the authority. The grant of \$1·25 million is payable to the States in each of the five years 1971-72 to 1975-76, a total of \$6·25 million. Payment is in specified proportions, Western Australia's share being 11·5 per cent or \$143,750 per annum.

Housing Agreement Act. The *Housing Agreement Act* 1973 provides for new arrangements to operate for a period of five years from 1 July 1973. The agreement is similar to the former Commonwealth and State Housing Agreement but with additional restraints.

The amounts payable to the States each year are not specified within the new legislation but are to be determined after an annual application by the States to the Australian Government. After consultations with the State Ministers the Australian Government determines the amounts payable to the States for the provision of welfare housing and allocations for advances to terminating building societies or co-operative housing societies, or other approved lending authorities of the State.

In terms of the *Housing Agreement Act* 1973 the Australian Government will advance funds to the States for the provision of welfare housing at an interest rate of 4 per cent.

From this low interest-bearing money not less than 85 per cent of all family accommodation provided must be for families that satisfy certain needs criteria. For a family which includes two children the main breadwinner would need to be earning not more than 85 per cent of gross average weekly earnings per employed male unit in the State, or in Australia, as a State may elect. The Act also defines needs criteria applicable to aged pensioner couples and single aged pensioners.

The new agreement has a proposed life of five years, 1973-74 to 1977-78. For the year 1973-74 Western Australia has been allocated \$13 million, of which \$3·9 million is to be allocated to terminating building societies and approved State lending authorities.

A separate agreement between the Australian Government and the States has been entered into covering the provision of housing for serving members of the armed forces. Under this agreement the Commonwealth provides, by way of repayable advances, all the funds required and the States are not required to set aside part of their housing allocation for this purpose.

States Grants (Dwellings for Aged Pensioners) Act. Under the provisions of the *States Grants (Dwellings for Aged Pensioners) Act* 1969 the Commonwealth has made available to the States a grant totalling \$25 million over a period of five years for the construction of self-contained dwellings for single aged pensioners. Western Australia will receive a total of \$1·75 million over the period and under this scheme the Commission built 28 units in 1969-70, 76 units in 1970-71, 12 units in 1971-72, and 106 in 1972-73.

Other Functions. The State Housing Commission conducts certain other housing schemes and has completed, or is currently engaged on, other specific projects on behalf of the State Government. Under a 'Departmental Homes' scheme, which commenced in 1952-53, 2,135 houses were built in the period to 30 June 1973 for Government Departments and semi-government authorities. A Government Employees' Housing Scheme was introduced in 1958-59 and, up to 30 June 1973, had provided 667 rental houses in country areas. (See also the section *Government Employees' Housing Authority* on page 222.) The Commission has also undertaken the erection of flats for occupation by widows and by aged women pensioners, as well as cottage flats for aged married couples. Design and supervisory services have been made available free of cost to several private charitable organisations which are developing pensioner housing schemes financed jointly by these organisations and the Commonwealth Government under the *Aged Persons Homes Act* 1954-1969 (Commonwealth). The Commission has also been made responsible from time to time for special housing schemes for industry or major developmental projects.

Operations of The State Housing Commission

In this section, a summary of the activities of The State Housing Commission is given. The second table below shows the number of housing units completed by the Commission in various categories during each year from 1968-69 to 1972-73. It also shows the numbers of housing units in connection with which the Commission provided design and supervisory services free of cost to private charitable organisations.

THE STATE HOUSING COMMISSION
REVENUE, EXPENDITURE AND FUNDS EMPLOYED
(£'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Revenue—					
Rentals	7,000	7,448	8,701	9,862	10,802
Profit on sale of—					
Houses and land	3,820	3,643	5,356	2,779	1,562
Sundry assets	3	6	5	6	9
Interest—					
Home purchase	5,319	5,787	6,120	4,763	5,163
Other	15	21	32	55	262
Recoup of management expenses	1,396	1,665	2,039	4,006	2,735
Fees and miscellaneous	408	473	558	583	562
Total Revenue	17,961	19,043	22,811	22,054	21,095
Expenditure—					
Interest—					
Loan capital	6,078	6,644	7,999	7,964	9,665
Debentures	592	681	837	1,023	1,229
Loan repayment	832	902	989	1,090	1,269
Management expenses	2,730	3,167	3,946	4,814	6,014
Rental outgoings	2,579	2,919	2,558	3,870	4,485
Other	58	66	75	147	91
Total Expenditure	12,869	14,379	16,404	18,908	22,753
Surplus	5,092	4,664	6,407	3,146	(a) 1,658
Funds employed at 30 June—					
Loan indebtedness—					
Government advances	179,592	193,043	210,243	232,265	243,430
Debenture issues	11,502	13,335	15,581	18,038	21,402
Commonwealth special grants	4,986	4,924	5,563	5,727	6,498
Accumulated surpluses and reserves	26,343	31,167	37,840	40,495	41,566
Total Funds employed	222,423	242,469	269,227	296,525	312,896

(a) Deficit.

THE STATE HOUSING COMMISSION—DWELLINGS CONSTRUCTION

Category	1968-69	1969-70	1970-71	1971-72	1972-73
Housing units (a) completed—					
State Housing Act	539	736	602	889	926
Commonwealth and State Housing Agreements (b)	936	1,088	2,368	1,360	846
Departmental Homes—					
Native Welfare Department	60	84	61	48	118
Other Departments	128	114	131	79	76
Government Employees' Housing	52	119	96	97	48
Shire Building Scheme (c)	2	31	25	23	15
Defence Service Homes	138	77	129	54	72
Dwellings for Aged Pensioners (d) .....	.....	28	76	12	106
Other (e) .....	.....	21	7	.....	.....
Total	1,855	2,298	3,495	2,562	2,207
Other activities (f)	8	62	4	19	.....

(a) Comprises houses and individual flat units. (b) From 1 July 1971 to 30 June 1973 replaced by the *States Grants (Housing) Act 1971-1973*. (c) For local government employees. (d) Constructed under the provisions of the *States Grants (Dwellings for Aged Pensioners) Act 1969*. (e) Comprises houses built by the Commission in terms of the *Laporte Industrial Factory Agreement Act, 1961-1965*, the *Broken Hill Proprietary Company's Integrated Steel Works Agreement Act, 1960*, the *Exmouth Development Scheme* and *Project Development (Special Agreements Scheme)*. (f) The figures shown represent housing units built by charitable organisations in connection with which the Commission provided design and supervisory services.

Government Employees' Housing Authority

The Government Employees' Housing Authority is established under the provisions of the *Government Employees' Housing Act, 1964-1973* to provide adequate and suitable

housing accommodation for employees of State Government Departments to which the Act applies.

The Authority is empowered to enter into an agreement with the State Housing Commission whereby the Commission shall act as its agent upon such terms as may be mutually agreed upon by the Authority and the Commission.

Defence Service Homes

Under the *Defence Service Homes Act* 1918-1973 the Australian Government provides assistance in acquiring a home to persons who satisfy the eligibility conditions set out in the Act. Persons eligible for assistance include (a) members of the Australian Forces and nursing services enlisted or appointed for or employed on active service outside Australia or on a ship of war during the first and second World Wars, or who served in the war-like operations in Korea or Malaya, or who have served on 'special service' as defined in the *Repatriation (Special Overseas Service) Act* 1962-1973 (e.g. South Vietnam), (b) Regular Servicemen who, on or after 7 December 1972, complete three years effective full-time service, and (c) National Servicemen who, on or after 7 December 1972, complete the period of service for which they were engaged. The categories of eligible persons also include the widow of an eligible person and, in certain circumstances, the widowed mother of a deceased eligible person, members of the mercantile marine service, and persons who, on or after 3 December 1939, complete service outside Australia as representatives of an approved welfare organisation. The maximum amount of loan is \$12,000 and the rate of interest $3\frac{3}{4}$ per cent.

The Australian Department of Housing and Construction acts as the representative in Western Australia of the Director of Defence Service Homes.

DEFENCE SERVICE HOMES SCHEME—OPERATIONS IN WESTERN AUSTRALIA

Year	Homes provided during year				Total homes provided from inception to end of year	Annual expenditure	Installments paid	Loans repaid
	By erection	By purchase	By discharge of mortgage	Total				
	No.	No.	No.	No.	No.	\$'000	\$'000	No.
1968-69	138	240	108	486	27,889	3,750	8,280	727
1969-70	77	234	151	462	28,351	4,100	8,041	677
1970-71	129	240	136	505	28,856	4,675	7,376	480
1971-72	54	263	144	461	29,317	4,623	7,912	651
1972-73	72	350	179	601	29,918	5,896	8,904	682

State Housing Death Benefit Scheme Act. The *State Housing Death Benefit Scheme Act*, 1965 establishes, with effect from 20 February 1965, a scheme to provide benefits for the families of purchasers of dwellings who die leaving unpaid the whole or part of a liability to the State Housing Commission under a contract of sale or mortgage. The benefit is applied to the credit of the deceased purchaser's account, and the instalments payable during the unexpired term of the loan are reduced accordingly.

From the inception of the scheme in 1965-66 to 30 June 1973, 205 claims have been admitted and a total of \$195,907 paid in the form of assistance to purchasers.

Additional details of the scheme are given on page 204 of the *Western Australian Year Book*, No. 8—1969 and in earlier issues.

Housing Loan Guarantee Act

The purposes of the *Housing Loan Guarantee Act*, 1957-1973 are to encourage, through provisions for guarantees and indemnities, the building and the purchasing of new houses. Under this Act, the Government provides guarantees to lenders of funds to building societies and other approved financial organisations making advances to persons desiring to purchase or build their own home on low deposits.

The maximum rate of interest which an approved institution may charge on a loan to a borrower is $8\frac{1}{2}$ per cent (31 December 1973). Loans may be made up to 95 per cent of the value of the house and land or a specified sum, whichever is the lesser amount. In respect of the metropolitan region the maximum loan permitted is \$14,000, and outside the metropolitan region but south of the 26th parallel it is \$15,000. For a new house situated north of the 26th parallel and in the North-West or Eastern Land Divisions, the maximum loan is \$19,000 and in the Kimberley Land Division, \$22,500.

Complementary action has been taken by the Commonwealth in establishing the Housing Loans Insurance Corporation to foster high-ratio loans (see following section).

Housing Loans Insurance Scheme

The Housing Loans Insurance Corporation was established by the *Housing Loans Insurance Act* 1965 (Commonwealth) to insure approved lenders against losses arising from the making of housing loans. The Corporation consists of a chairman (who is also managing director) and a deputy chairman, who are full-time members, and three part-time members, all of whom are appointed by the Governor-General. The main purpose of the Corporation is to assist people to obtain, as a single loan and at a reasonable rate of interest, the money they need and can afford to borrow to obtain a home suited to their requirements.

For a loan to acquire a house or a home unit, the maximum amount insurable is \$40,000 and the maximum ratio of the loan amount to valuation of the property is 95 per cent. The maximum period of repayment for an insurable loan to acquire a house is forty years and for a loan to purchase a home unit, thirty-five years.

The Corporation charges a single premium at the outset of the loan. The premium rate depends on the ratio of the loan amount to property valuation—a premium of 1.4 per cent is charged where the loan represents 94 per cent or more of valuation but, for loans of less than 94 per cent of valuation, the premium rate reduces progressively to a minimum of 0.25 per cent for loans below a ratio of 76 per cent. These rates took effect from 14 September 1973.

The Housing Loans Insurance Corporation insures loans that are made for a wide range of purposes in addition to the purchase or construction of a dwelling. The other purposes include alterations, extensions or improvements to a dwelling, and the provision of roads, kerbing and footpaths. Loans may only be insured for approved lenders who are appointed by the Corporation from within approved classes of lenders specified by the Minister for Housing and Construction. The approved classes include banks, permanent building societies, co-operative housing societies, friendly societies, life insurance companies, general insurance companies, mortgage management companies, trustee companies, credit unions, and solicitors', superannuation and provident funds. The Housing Loans Insurance Corporation commenced its insurance operations in November 1965 and to 30 June 1973 had insured loans in Western Australia amounting to \$268 million (net).

HOUSING LOANS INSURANCE CORPORATION LOANS INSURED IN WESTERN AUSTRALIA

Purpose of loan	1968-69		1969-70		1970-71		1971-72		1972-73	
	Number	\$'000	Number	\$'000	Number	\$'000	Number	\$'000	Number	\$'000
Houses—										
For building a new house	334	4,181	513	7,000	813	10,760	1,203	16,216	1,393	20,786
For purchase of a new house	588	7,356	1,085	14,416	1,273	16,782	1,512	20,217	2,303	33,021
For purchase of a used house	448	5,033	728	9,433	954	11,823	1,661	20,740	2,969	40,003
For discharge of mortgage	13	141	48	649	80	953	151	1,798	190	2,443
Home units—										
For purchase of a new or used unit or discharge of mortgage	62	652	174	2,019	335	3,721	357	4,113	311	3,767
Other	38	482	59	542	76	433	104	590	109	1,048
Total	1,483	17,845	2,607	34,059	3,531	44,472	4,988	63,674	7,275	101,068

Homes Savings Grants

The *Homes Savings Grant Act* 1964-1973 (Commonwealth), which came into operation on 28 May 1964, is designed to 'assist young married persons, and young widowed and divorced persons with dependent children, to purchase or build their own homes'. The Act is administered, subject to any directions of the Minister, by the Secretary to the Department of Housing and Construction.

The Act provides for the payment to eligible persons of a grant of \$1 for every \$3 saved for a home by one or both of the marriage partners. The grant takes the form of a gift free of tax and is payable in respect of a house, a home unit or a flat. The maximum benefit is \$750 payable on savings of \$2,250 which must be 'acceptable' savings within the meaning of the Act.

To qualify for the grant a person must be married or a widowed or divorced person with one or more dependent children; must have lived and saved in Australia for at least three years or was an Australian citizen throughout that period; must have entered into a contract to buy a home or to have a home built, or have begun to build a home; must be under thirty-six years of age at the date of marriage and at the date of entering into a contract to buy or build the home or at the date on which building began; must not have already received a grant and must not be, nor previously have been, married to a person who has received a grant during the marriage. An undischarged bankrupt or a person serving a term of imprisonment may not receive a grant.

The grant is not payable in respect of a home where the cost, including the cost of land, exceeds \$22,500.

Grants are financed from the National Welfare Fund and the first payments were made during the year ended 30 June 1965. Expenditure on grants in Western Australia amounted to \$1,114,999 in 1971-72 and \$1,313,730 in 1972-73.

CONTROL OF BUILDING

Each of the local government authorities as constituted under the provisions of the *Local Government Act, 1960-1973* has power to exercise general control over the erection of buildings in its own district. The powers of local government authorities to control building derive from the Town Planning and Development Act and the Local Government Act.

The *Town Planning and Development Act, 1928-1973* gives local authorities the right to make by-laws covering such aspects of town planning as the purchase or reservation of land for thoroughfares, the density of dwelling accommodation per acre, the classification of areas for residential, commercial, industrial and recreational use, the prescription of building standards, and the general planning of new subdivisions. Town planning measures proposed by a local authority are subject to the approval of the Minister for Town Planning, who has the advice of a Town Planning Commissioner and a Town Planning Board.

The *Local Government Act, 1960-1973* contains provisions for the control of building which are compatible with those exercised under the Town Planning and Development Act but are in a more detailed form. Many local government authorities have applied the Uniform Building By-laws, and the erection of all buildings must be carried out in compliance with these by-laws. The Local Government Act provides that no new building or the alteration of an existing building may be begun before the plans have been approved by the local authority. The Governor may by Order, at the request of a local authority, suspend the operation of this provision in its district. Generally, in remote parts of the State prior approval of plans is required only in the case of building in town-site areas. Where any local authority refuses to approve plans, the Act provides that an appeal may be made to the Minister for Local Government, who has the power to modify or reverse the decision of the local authority. The decision of the Minister is final and not subject to appeal. Other appeals or matters in dispute in relation to the control of building may be determined only by two referees, one of whom is appointed by the Governor and the other by the local authority concerned.

BUILDING OPERATIONS

Since the end of the second World War, the Australian Statisticians have undertaken a quarterly collection of statistics of building operations. The first of these collections in Western Australia related to the quarter ended 30 September 1945.

Statistics of various series for Western Australia *ab initio* appeared in Part XII of the *Statistical Register of Western Australia* for 1965-66. Current data are given in the quarterly statement *Building Operations* and in the annual publication *Statistics of Western Australia—Building and Housing*.

The survey covers the activities of building contractors who undertake the construction of new buildings; the building operations of Commonwealth, State, semi-government and local government authorities; and work performed by owner-builders.

The statistics in this section relate only to the erection of buildings as distinct from the construction of railways, bridges, earthworks, etc.

In the following table the value of new buildings completed, classified according to the function each building is intended to serve, is shown for the period 1968-69 to 1972-73. The values shown for each type of building exclude the value of land and represent the estimated value of the buildings on completion.

VALUE OF NEW BUILDINGS COMPLETED—TYPE OF BUILDING (a)
(\$'000)

Type of building	1968-69	1969-70	1970-71	1971-72	1972-73
Houses—					
Material of outer walls—					
Brick, brick veneer, concrete, stone	110,796	130,842	130,148	150,483	151,074
Wood (weatherboard, etc.)	69	355	1,684	267	152
Asbestos-cement	21,865	19,797	17,397	13,856	13,784
Other	546	307	442	2,129	227
Total, Houses	133,276	151,300	149,671	166,736	165,237
Flats	22,406	40,519	39,964	13,914	7,308
Total, Houses and flats	155,682	191,819	189,636	180,650	172,545
Other new buildings—					
Hotels, hostels, etc.	11,417	14,815	17,054	13,237	17,510
Shops	4,052	7,501	11,270	16,833	27,504
Factories	15,845	16,615	18,006	21,336	15,594
Office premises	10,885	14,294	39,736	19,360	21,245
Other business premises	12,574	15,968	18,816	14,591	17,965
Education	14,122	13,297	20,589	16,325	24,767
Religion	1,644	995	1,145	1,152	680
Health	7,373	5,949	17,527	17,250	6,342
Entertainment and recreation	3,848	6,033	6,750	6,385	9,504
Miscellaneous	17,391	16,110	24,485	24,322	10,355
Total, Other new buildings	99,152	111,577	175,377	150,790	151,468
TOTAL, ALL NEW BUILDINGS	254,833	303,397	365,012	331,440	324,013

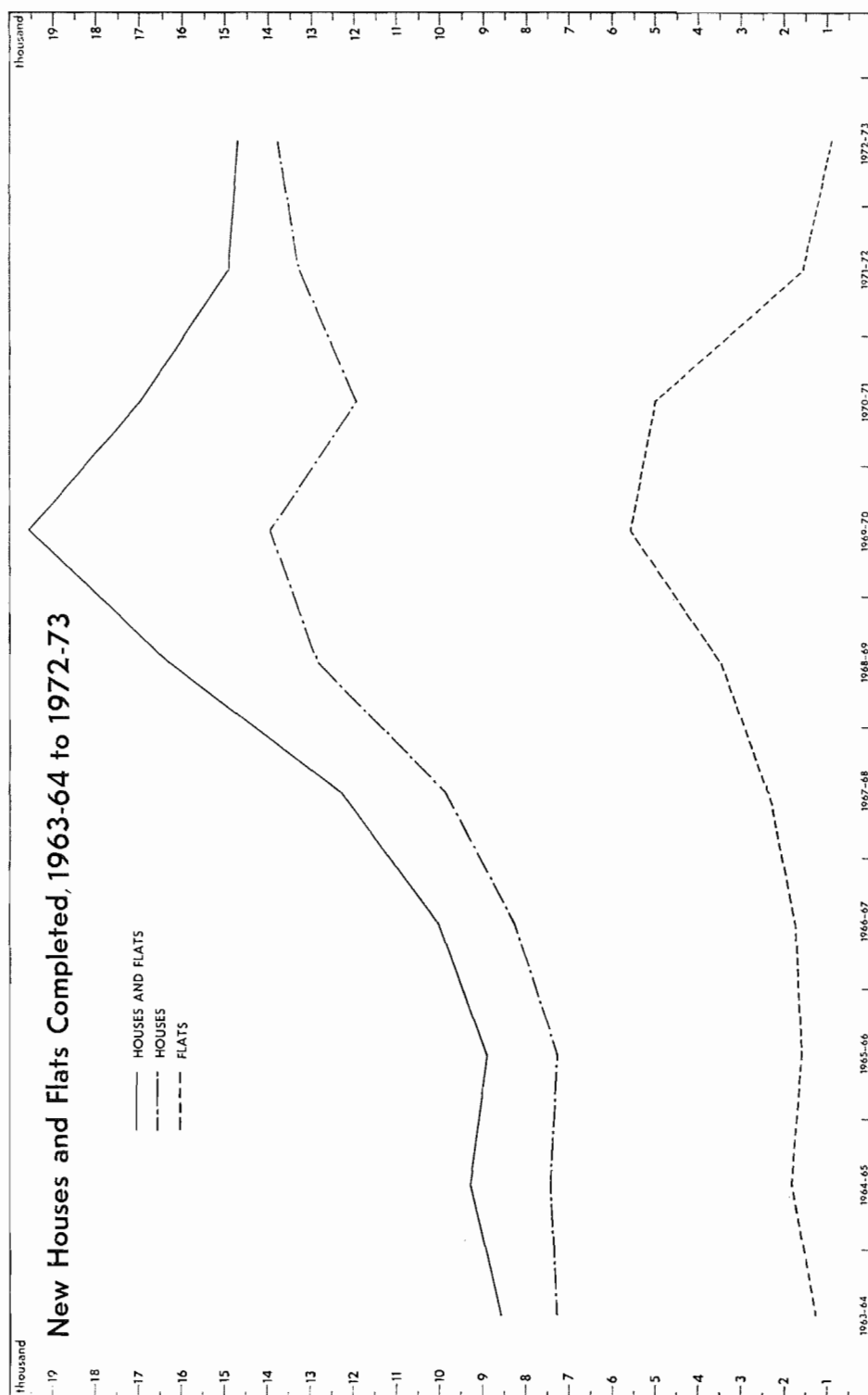
(a) See letterpress preceding table.

The following table shows the number of new houses and flats completed, according to ownership, in each of the five years 1968-69 to 1972-73.

NUMBER OF NEW HOUSES AND FLATS COMPLETED ACCORDING TO OWNERSHIP

Year	Private ownership (a)			Government ownership (a)			Total		
	Houses	Flats	Houses and flats	Houses	Flats	Houses and flats	Houses	Flats	Houses and flats
1968-69	11,007	3,337	14,344	1,833	154	1,987	12,840	3,491	16,331
1969-70	12,384	4,915	17,299	1,549	681	2,230	13,933	5,596	19,529
1970-71	9,648	3,608	13,256	2,273	1,405	3,678	11,921	5,013	16,934
1971-72	11,167	992	12,159	2,120	603	2,723	13,287	1,595	14,882
1972-73	11,723	770	12,493	2,057	150	2,207	13,780	920	14,700

(a) See letterpress on page 228.



A building is classified as 'private' or 'government' according to ownership at date of commencement. Thus 'government' includes buildings erected for Commonwealth and State Governments, semi-government and local government authorities, either by contractors or by day labour, whether these buildings are for their own use or for rental or sale after completion. Houses erected for private ownership, or which are financed or supervised by government authorities but erected for particular persons, are classified as 'private'.

As an indication of the distribution of building activity throughout the State, the number of new houses completed in each Statistical Division during 1968-69 to 1972-73 is shown in the next table.

NUMBER OF NEW HOUSES COMPLETED IN STATISTICAL DIVISIONS

Statistical Division	1968-69	1969-70	1970-71	1971-72	1972-73
Perth Statistical Division	9,246	10,463	7,805	9,670	11,453
Other Divisions—					
South-West	834	973	948	1,032	753
Southern Agricultural	384	365	314	196	237
Central Agricultural	407	331	179	148	135
Northern Agricultural	659	637	500	455	446
Eastern Goldfields	489	486	467	356	303
Central	14	16	296	15	12
North-West	61	146	174	290	(a) 359
Pilbara	623	416	1,152	1,070	
Kimberley	123	100	86	55	82
Total	3,594	3,470	4,116	3,617	2,327
WESTERN AUSTRALIA	12,840	13,933	11,921	13,287	13,780

(a) Extensive boundary changes between the North-West and Pilbara Statistical Divisions resulting from reallocation of local government area boundaries have necessitated the amalgamation of these divisions for publication purposes after 30 June 1972.

A further measure of building activity is that of 'value of work done' which is the estimated value of work actually carried out on buildings during the period. For any building, the sum of these values obtained during its construction equals the value of the building on completion. The figures in the following table include estimates for the value of work done on owner-built houses.

VALUE OF WORK DONE ON NEW BUILDINGS
(\$'000)

Type of building	1968-69	1969-70	1970-71	1971-72	1972-73
Houses and flats—					
Houses	137,168	154,761	150,633	157,798	180,351
Flats	29,219	44,783	28,302	11,022	8,952
Total, Houses and flats	166,386	199,545	178,955	168,819	189,303
Other new buildings—					
Hotels, hostels, etc.	10,425	16,574	16,241	18,711	9,115
Shops	5,234	8,434	14,700	22,686	21,888
Factories	15,334	16,052	19,400	21,419	16,726
Office premises	15,111	26,692	31,480	23,442	18,390
Other business premises	13,499	18,937	18,905	16,049	12,314
Education	12,436	15,829	20,626	19,325	22,165
Religion	1,255	1,068	1,041	1,216	792
Health	7,871	12,937	13,973	11,444	14,558
Entertainment and recreation	4,463	6,539	7,455	7,293	6,819
Miscellaneous	17,994	20,336	24,243	19,406	11,735
Total, Other new buildings	103,625	143,398	168,067	160,992	134,502
TOTAL, ALL NEW BUILDINGS	270,012	342,943	347,022	329,811	323,805

Employment in Building

Details of building employment are given in the following table. The figures shown relate to persons working on the jobs of contractors who undertake the erection of new buildings and on the jobs of government authorities which erect new buildings on their own account. They include persons actually engaged on alterations, additions, repairs,

and maintenance when these jobs are undertaken by such contractors and authorities. The figures also include the number of persons working on new private buildings (other than houses) erected without the services of a contractor responsible for the whole job.

Informants are asked to supply details of all persons employed on their jobs *on a specified day*, including working principals, men working as or for sub-contractors, and men temporarily laid off on account of weather. Because of the intermittent employment of various types of sub-contractors on any particular job, it is sometimes difficult for informants to provide precise particulars of the number of sub-contractors and sub-contractor employees working on their jobs on the specified day. This factor may cause some understatement in the figures shown in the table. In other cases, because of frequent movement between jobs of some types of tradesmen (such as electricians) who may work on several jobs on the one day, some duplication may occur.

The figures *exclude* persons working on owner-built houses, and employees of building firms which undertake only alterations, additions, repairs, and maintenance.

EMPLOYMENT IN BUILDING (a)

Classification	End of June—				
	1969	1970	1971	1972	1973
Occupational status—					
Contractors	697	673	646	590	771
Sub-contractors....	3,731	3,132	3,181	3,213	4,274
Wage earners	14,773	15,788	13,965	11,694	12,564
Total	19,201	19,593	17,792	15,497	17,609
Occupation—					
Carpenters	5,007	5,114	4,327	3,623	4,001
Bricklayers	2,954	2,463	2,365	2,258	3,043
Painters	1,723	1,611	1,476	1,395	1,484
Electricians	1,373	1,364	1,235	1,165	1,331
Plumbers	1,711	1,695	1,579	1,446	1,657
Builders' labourers	2,978	3,171	2,433	2,208	2,479
Other	3,455	4,175	4,377	3,402	3,614
Total	19,201	19,593	17,792	15,497	17,609

(a) See letterpress preceding table.

DWELLINGS COMPLETED IN AUSTRALIA

The following table shows the numbers of new houses and flats completed in each of the Australian States and Territories during the year 1972-73. In Western Australia the number of new houses and flats completed per thousand of mean population was 13·81, compared with 11·19 in the rest of Australia and 11·40 in Australia as a whole.

NEW HOUSES AND FLATS COMPLETED—AUSTRALIAN STATES AND TERRITORIES
1972-73

State or Territory	Houses	Flats (a)	Houses and flats (a)		
			Total number completed	Proportion of Australian total (per cent)	Per thousand of mean population
New South Wales	28,565	19,348	47,913	32·13	9·65
Victoria	28,260	9,923	38,183	25·60	10·67
Queensland	20,696	5,743	26,439	17·73	13·94
South Australia	8,977	4,217	13,194	8·85	11·04
Western Australia	13,780	920	14,700	9·86	13·81
Tasmania	2,384	781	3,165	2·12	8·01
Northern Territory	973	448	1,421	0·95	15·16
Australian Capital Territory	3,683	446	4,129	2·77	25·31
AUSTRALIA	107,318	41,826	149,144	100·00	11·40

(a) Individual living units.

Chapter V—continued

Part 5—Social Benefits, Pensions and Welfare Services

NOTE. The conditions relating to payment of the several benefits dealt with in this Part are described *as they existed at 30 April 1974*. Rates of benefit, where quoted in textual matter, are those which were current at that date. The information given is intended to serve only as a general guide to the main provisions relating to social security and repatriation benefits and national health services provided by the Australian Government and relief payments made by the State Government.

The Australian Government's social security programme is designed to provide protection against economic hardship caused by events such as loss of earnings by reason of age, invalidity, sickness or unemployment, or the death or the absence of a supporting male as a result of desertion or long-term separation. Another aim of the system is to help parents with the expenses associated with the bearing and rearing of children. It is designed also to compensate ex-servicemen for disabilities caused by war service and to assist the dependants of those who died as a result of war service.

This assistance may take the form of (a) financial aid to or for institutions, organisations or authorities (see pages 205-9) or (b) regular cash payments to or on behalf of individuals, which may be either selective benefits (*i.e.* subject to a means test) such as age and invalid pensions and widows' pensions, or universal benefits (*i.e.* free of means test) such as maternity allowances and child endowment. In addition, there is provision for a wide range of welfare services for people with special needs (*e.g.* invalids and widows may be trained so that they can re-enter paid employment).

The Social Services Act provides for pensions and other benefits dealt with on pages 231-7; the Repatriation Act, for war pensions, service pensions, and allowances (see pages 237-9); and the Tuberculosis Act, for allowances to sufferers from tuberculosis as well as assistance to the States in a national campaign against the disease (see pages 242 and 244). Health services such as medical, hospital and pharmaceutical benefits are authorised by the National Health Act (see pages 239-44).

Pensions and other benefits provided under the Social Services Act and health services provided under the National Health Act are financed from the National Welfare Fund. Other payments from the fund include allowances to sufferers from tuberculosis and reimbursement to the States of maintenance expenditure in connection with the diagnosis, treatment and control of tuberculosis. The fund receives each year by transfer from the Consolidated Revenue Fund an amount equal to the payments made. Other income of the National Welfare Fund is derived from interest on investments. Details of expenditure from the fund in Western Australia during the five-year period ended 30 June 1972 are given in the table on page 266.

War pensions, service pensions, and allowances provided under the Repatriation Act are financed from the Consolidated Revenue Fund.

The State Government makes certain payments for the relief of women and others in necessitous circumstances which in most cases supplement benefits provided by the Australian Government (see letterpress *State Relief Payments* on pages 245-6).

Rates of Benefit

The following table shows the maximum weekly rates applying to age and invalid pensions, sheltered employment allowances, widows' pensions, supporting mothers' benefits (introduced 3 July 1973), and unemployment and sickness benefits. The rates shown apply also to service pensions (see page 239).

MAXIMUM WEEKLY RATES OF BENEFIT (a)
(£)

Pension, benefit or allowance	Rate current at—		
	31 March 1973	31 October 1973	30 April 1974
Single (i.e. unmarried) rate	21·50	23·00	26·00
Married rate (combined)	37·50	40·50	45·50
Each dependent child, including student child (b)	4·50	5·00	5·00
Guardian's (or mother's) allowance (c)—			
Where there is a child aged under 6 years or an invalid child requiring full-time care	6·00	6·00	6·00
Other cases	4·00	4·00	4·00
Supplementary assistance (d)	4·00	4·00	4·00

(a) Rates current at dates prior to those shown in this table appear in *Western Australian Year Book*, No. 12—1973 (pages 238, 241 and 555), and earlier issues. (b) See letterpress *Student Children* on page 236. (c) Guardian's allowance payable to unmarried pensioner or recipient of sheltered employment allowance having the care of one or more dependent children, including student children. (d) Payable where pensioner or beneficiary is wholly or substantially dependent on the pension or benefit and is paying rent or lodging charges.

BENEFITS PAYABLE UNDER SOCIAL SERVICES ACT

Age and Invalid Pensions and Allowances

AGE AND INVALID PENSIONS (a)—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of pensioners at 30 June—					
Age—					
Males	15,257	17,329	18,071	18,930	21,948
Females	35,175	38,688	40,153	41,593	46,753
Persons	50,432	56,017	58,224	60,523	68,701
Invalid—					
Males	4,746	4,453	4,499	4,704	5,474
Females	3,667	3,480	3,656	3,781	4,044
Persons	8,413	7,933	8,155	8,485	9,518
	\$	\$	\$	\$	\$
Average weekly pension at 30 June (b)—					
Age	12·85	13·55	14·29	16·30	19·56
Invalid	14·67	15·76	16·57	19·02	22·65
	\$'000	\$'000	\$'000	\$'000	\$'000
Amount paid during year (c)	39,441	44,711	49,053	57,470	76,358

(a) Includes particulars of sheltered employment allowances. (b) Includes allowances and supplementary assistance. (c) Includes amounts paid to benevolent homes for maintenance of pensioners and to pensioner inmates of these homes. Includes also allowances and supplementary assistance.

Age Pensions. Age pensions are payable, subject to a means test on income and property, to residentially qualified women aged sixty years or more and to residentially qualified men aged sixty-five years or more. To qualify for age pension, a period of ten years' continuous residence in Australia is usually necessary. The means test applying to age pensions was abolished in 1973 for those aged seventy-five years and over, and it is planned to make progressive reductions in the age beyond which the means test will cease to apply.

Wife's pension, subject to a means test, is payable to an age pensioner's wife who does not qualify for an age pension, invalid pension or service pension in her own right.

Additional payments are made to pensioners with dependent children. These additional payments are subject to a means test. Supplementary assistance is payable, subject to a special means test, to pensioners who are required to pay rent or lodging charges. On the death of one of a married pensioner couple, the surviving member may become entitled to receive, for up to six fortnightly instalments, the equivalent of the two pensions that would have been paid if the spouse had not died.

Invalid Pensions. Invalid pensions are payable, subject to a means test on income and property, to residentially qualified persons aged not less than sixteen years who are permanently incapacitated for work to the extent of at least 85 per cent or who are permanently blind. To be residentially qualified a period of five years' continuous residence in Australia is necessary unless the incapacity occurred outside Australia, in which case the residence qualification is the same as that for an age pension.

A wife's pension is payable to the wife of an invalid pensioner if she is not eligible for age pension, invalid pension or service pension in her own right. Invalid pensioners are eligible for the same additional payments as age pensioners and the rates of benefit are the same.

Sheltered Employment Allowances

Sheltered employment allowances are payable to disabled persons who are qualified to receive an invalid pension or who would become so qualified if they ceased to be provided with sheltered employment. The allowance is subject to the same means test as that which applies to the invalid pension, and the rates of benefit are the same.

SHELTERED EMPLOYMENT ALLOWANCES—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of (a)—					
Workshops paying allowances	5	5	5	6	7
Employees receiving allowances	84	97	106	134	176
Expenditure on allowances	\$'000 37	\$'000 74	\$'000 74	\$'000 96	\$'000 170

(a) At 30 June.

Funeral Benefits

A funeral benefit up to a maximum of \$20 is payable to any person liable for the funeral costs of an age or invalid pensioner. A higher benefit, up to a maximum of \$40, is payable to an age, invalid or widow pensioner liable for the funeral costs of a spouse, a child, or of another such pensioner.

Widows' Pensions and Allowances

Pensions are payable to widows, subject to a means test on income and property. No period of residence is necessary if a woman and her husband were residing permanently in Australia when she became a widow. In other cases, five years' continuous residence immediately preceding lodgment of claim is necessary but this requirement is waived in the case of a woman widowed overseas who returns to Australia, provided she had resided continuously in Australia for ten years at any time.

There are three classes of widow pensioners: Class A—a widow with one or more dependent children in her care; Class B—a widow without dependent children who is at least fifty years of age, or is not less than forty-five years of age when her Class A pension ceases because she no longer has a dependent child in her care; and Class C—a widow without dependent children and in necessitous circumstances within twenty-six weeks of her husband's death. For all classes, the term 'widow' includes a woman who was the common-law wife of a man for at least three years immediately before his death. For Classes A and B, the term includes a wife who has been deserted for six months, a divorcee, a woman whose husband has been imprisoned for six months, or a woman whose husband is in a mental hospital.

Widow pensioners are eligible for supplementary assistance, additional payments for dependent children, and mother's allowance (in place of guardian's allowance) at the same rates and subject to the same conditions as age and invalid pensioners.

Details of widows' pensions paid in Western Australia are given in the next table.

WIDOWS' PENSIONS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of pensions current at 30 June—					
Class A pensioners	2,579	2,903	3,050	3,368	4,088
Class B pensioners	2,972	3,178	3,328	3,417	3,851
Class C pensioners	8	5	14	10	9
Total	5,559	6,086	6,392	6,795	7,948
Average weekly pension at 30 June (a)	\$ 16.98	\$ 18.41	\$ 19.03	\$ 22.44	\$ 27.62
Amount paid during year (a)	\$'000 4,786	\$'000 5,600	\$'000 6,172	\$'000 7,180	\$'000 10,064

(a) Includes allowances and supplementary assistance.

Supporting Mother's Benefit and Allowances

The supporting mother's benefit is payable under the provisions of the *Social Services Act (No. 3) 1973*. It was introduced, with effect from 3 July 1973, to assist unmarried mothers and mothers who are deserted *de facto* wives, *de facto* wives of prisoners, or separated wives. The benefit is paid at the same rate and subject to similar conditions as the Class A widow's pension. Payment commences six months after the birth of a child or the date of separation. (During this period a claimant may be eligible to receive State Government assistance; see the section *State Relief Payments* on pages 245-6.)

Unemployment, Sickness and Special Benefits

Unemployment and sickness benefits are available, subject to a means test on income, to persons who have suffered loss of income because they are unemployed or are temporarily incapacitated for work. There is a waiting period of seven days before benefits are paid. (During this period a claimant may be eligible to receive State Government assistance; see the section *State Relief Payments* on pages 245-6.)

A special benefit may be paid to a person ineligible for a pension or for an unemployment or sickness benefit, if he is unable to earn a sufficient livelihood for himself and his dependants.

UNEMPLOYMENT, SICKNESS AND SPECIAL BENEFITS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Unemployment benefit—					
Number admitted to benefit during year	6,521	6,362	12,718	33,359	38,422
Average number on benefit at end of each week	524	474	872	2,808	4,960
Number on benefit at end of year—					
Males	226	598	*1,146	4,836	2,935
Females	243	205	* 297	987	1,137
Persons	469	803	*1,443	5,823	4,072
Sickness benefit—					
Number admitted to benefit during year	5,057	5,358	5,775	7,028	7,970
Average number on benefit at end of each week	525	492	547	761	1,082
Number on benefit at end of year—					
Males	401	400	440	738	1,056
Females	84	119	170	217	275
Persons	485	519	610	955	1,331
Special benefit (a)—					
Number admitted to benefit during year	805	817	1,027	942	887
Average number on benefit at end of each week	230	231	278	268	265
Number on benefit at end of year—					
Males	19	23	15	27	28
Females	230	228	223	252	264
Persons	249	251	238	279	292
Benefits paid during year—	\$'000	\$'000	\$'000	\$'000	\$'000
Unemployment	309	407	828	2,945	6,253
Sickness	389	508	719	1,159	1,840
Special (a)	97	123	151	194	279
Total (a)	795	1,039	1,699	4,297	8,372

(a) Excludes special benefits to migrants in accommodation centres.

* Revised.

To be eligible for unemployment or sickness benefit, a person must be at least sixteen years of age and under sixty, in the case of a female, or under sixty-five, in the case of a male. The claimant must also have lived in Australia for at least a year immediately before applying for benefit, or have the intention of remaining in Australia permanently.

The rates of benefit are the same as for age and invalid pensions. A beneficiary with a dependent child or children is eligible for an additional benefit for each dependent child. After having received benefit for six consecutive weeks, a sickness beneficiary is also eligible, subject to a special means test, to receive supplementary assistance if paying rent or lodging charges. This assistance is not payable to a beneficiary who is in hospital and who has no dependants.

Rehabilitation Service

The Rehabilitation Service is designed to restore disabled persons as fully as possible to physical, mental, social and vocational usefulness. Treatment and training are provided free to persons in the following categories if there is a reasonable prospect of their engaging in gainful employment: invalid pensioners; widow pensioners or recipients of supporting mother's benefit; recipients of unemployment, sickness, or special benefit; servicemen who are disabled at time of discharge but are ineligible for rehabilitation assistance from the Repatriation Department; persons receiving a tuberculosis allowance; persons who become disabled while working for the Australian Government and who are covered by the Compensation (Australian Government Employees) Act; and boys and girls of fourteen to fifteen years of age who would otherwise be likely to qualify for an invalid pension at the age of sixteen years.

REHABILITATION SERVICE—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number accepted for rehabilitation—					
Invalid pensioners	24	25	25	19	20
Unemployment and sickness beneficiaries	131	121	124	148	196
Other	17	16	16	16	51
Total	172	162	165	183	267
Number placed in employment—					
Invalid pensioners	11	20	23	17	14
Unemployment and sickness beneficiaries	113	101	97	98	119
Other	7	15	10	13	29
Total	131	136	130	128	162
Expenditure	\$'000 196	\$'000 254	\$'000 331	\$'000 448	\$'000 529

Training Scheme for Widow Pensioners

TRAINING SCHEME FOR WIDOW PENSIONERS (a)—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Applications received from—					
Class A pensioners	97	72	237	132	166
Class B pensioners	39	18	61	31	30
Total	136	90	298	163	196
Number of pensioners—					
Accepted for training	81	77	193	137	120
Commenced training	58	77	201	175	150
Completed training	13	56	51	122	80
Placed in employment	13	50	57	70	85
Expenditure	\$'000 12	\$'000 30	\$'000 55	\$'000 54	\$'000 37

(a) Introduced September 1968.

The Training Scheme for Widow Pensioners provides vocational training for Class A and Class B widow pensioners and recipients of the supporting mother's benefit. In addition to her pension or benefit, a trainee receives a training allowance and, where appropriate, a living-away-from-home allowance. Tuition fees and fares to and from the place of training are paid for under the scheme, and books and other necessary equipment are provided.

Maternity Allowance

Maternity allowance is payable, as a lump sum, to mothers on the birth of children. There is no means test. A woman is entitled to the allowance if she resides, or intends to reside, in Australia permanently and gives birth to a child in Australia or on board a ship travelling to Australia. Special conditions apply to a woman who is not a British subject and who does not intend to reside in Australia permanently.

MATERNITY ALLOWANCES—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of claims paid—					
Single births: amount of allowance—					
\$30	7,770	7,682	9,190	9,152	8,111
\$32	9,296	9,432	10,828	10,585	10,606
\$35	3,083	2,990	3,179	2,882	2,550
Multiple births: amount of allowance—					
Twins—					
\$40	77	63	66	64	70
\$42	94	90	103	117	114
\$45	59	37	50	39	30
Triplets—					
\$50	1	1	1	2	1
\$52	1	1	1	1	1
\$55	1	1	1	1	1
Total number of claims paid	20,381	20,294	23,417	22,842	21,484
Amount paid	\$'000 648	\$'000 645	\$'000 743	\$'000 724	\$'000 680

The allowance is \$30 where there are no other children under sixteen years of age, \$32 where the mother has one or two other children under sixteen years of age, or \$35 where she has three or more other such children. The amount payable is increased by \$10 for each additional child of a multiple birth.

Child Endowment

Child endowment is payable, free of means test, to persons having the care of children under sixteen years of age or student children. Endowment for the first child under sixteen years of age is at the rate of fifty cents per week, for the second child \$1 per week, and for the third child \$2 per week. For each subsequent child the endowment increases progressively by twenty-five cents, so that the weekly rate payable for the fourth child is \$2.25, for the fifth child \$2.50, and so on. Endowment is payable to a person having the care of a student child (or children) aged sixteen years but under twenty-one years who is receiving full-time education at a school, college or university and is not in employment or engaged in work on his own account. Endowment is at the rate of \$1.50 per week for each such child.

Endowment is usually paid to the mother and to be eligible for endowment she must reside, or intend to reside, permanently in Australia and have the care of one or more children. Special conditions apply if the person does not intend to reside permanently in Australia.

An approved institution is qualified to receive \$1.50 per week in respect of each student child and \$2 per week for each other child in its care.

Details of child endowment for the five years ended 1972-73 are given in the following table.

CHILD ENDOWMENT—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Endowed families at 30 June—					
Number of claims in force in respect of—					
Children under 16 years of age	136,454	140,719	147,507	153,600	156,774
Student children	10,486	10,495	12,316	14,039	16,088
Number of endowed children—					
Children under 16 years of age	313,857	317,904	329,671	338,855	342,055
Student children	11,290	11,367	13,449	15,390	17,790
Average number of endowed children per claim—					
Children under 16 years of age	2.30	2.26	2.24	2.21	2.18
Student children	1.09	1.08	1.09	1.10	1.10
Approved institutions at 30 June—					
Number of endowed child inmates—					
Children under 16 years of age	4,290	4,154	4,177	4,600	4,714
Student children	156	172	288	62	31
Total number of endowed children at 30 June—					
In families	325,147	329,271	343,120	354,245	359,845
In institutions	4,446	4,326	4,465	4,662	4,745
Total	329,593	333,597	347,585	358,907	364,590
Amount paid during year (a) (b)	\$'000 15,540	\$'000 (c) 17,894	\$'000 16,423	\$'000 18,188	\$'000 (c) 21,407

(a) Includes payments to institutions. (b) A number of endowments are paid every 12 weeks. During two years in every three, there are four such payments each year, and five in the third year. (c) Expenditure in this year includes five 12-weekly payments; see footnote (b).

Double Orphan's Pension

Double orphan's pension, payable under the provisions of the *Social Services Act* (No. 4) 1973, was introduced with effect from 9 October 1973. Conditions relating to payment are generally similar to those applying to child endowment. For the purposes of the Act a double orphan is a child aged under sixteen years, or a student child aged sixteen but under twenty-one years, both of whose parents are dead or one of whose parents is dead and the whereabouts of the other unknown. The pension, which is additional to child endowment, is paid at the rate of \$10 per week and is not subject to a means test. It may be paid to a person, institution or authority and is to be applied to the maintenance, training and advancement of the child. The pension is not payable in the case of a child in respect of whom a war orphan's pension is being paid in terms of the Repatriation Act.

Student Children

The *Social Services Act* 1973, which came into operation on 16 March 1973, defines a student child as being a person who is wholly or substantially dependent on a pensioner or beneficiary and who ' (a) has attained the age of sixteen years; (b) is receiving full-time education at a school, college or university; and (c) is not in receipt of an invalid pension '. Payments on account of student children which, prior to the operation of the Act, ceased when the student reached the age of twenty-one years were thus extended without limitation in respect of age. This extension of benefit applies to student children of age, invalid and widow pensioners, recipients of supporting mother's benefit, and unemployment and sickness beneficiaries. However, the age limit of twenty-one years continues to apply to the payment of child endowment on account of student children.

Payment of Benefits outside Australia

Reciprocal arrangements in respect of payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits and child endowment have been in force between the Governments of Australia and New Zealand since 1 July 1949 and between Australia and the United Kingdom since 7 January 1954.

The *Social Services Act* (No. 3) 1972 provided for the continued payment of a pension, subject to certain conditions, if a pensioner left Australia to reside in any other country with which appropriate reciprocal arrangements had been made. The *Social Services Act* (No. 2) 1973, which came into operation on 8 May 1973, repeals this provision and enables age and invalid pensions (including wives' pensions) and widows' pensions, which

were granted in Australia, to continue to be paid in any country where the pensioner may choose to live. In terms of the *Social Services Act (No. 3) 1973*, a woman receiving supporting mother's benefit may continue to be paid the benefit outside Australia so long as she remains a supporting mother.

BENEFITS PAYABLE UNDER REPATRIATION ACT

War Pensions and Allowances

War pensions and allowances are paid without the application of a means test. In general, for an ex-serviceman or his dependants to be eligible for war pension and associated benefits, the ex-serviceman must have had service in the 1914-1918 War, the 1939-1945 War, or certain subsequent operations of a war-like nature, and have suffered incapacity or death related to that service. Basic eligibility varies according to the nature of service. Broadly, for those with 'active service', incapacity or death resulting from any occurrence during war service may be accepted. The criterion applying to 'home service' is more restricted, in that incapacity or death must have arisen out of, or be attributable to, war service.

Pensions for Ex-servicemen. Pensions are paid to eligible ex-servicemen in three main categories: the Special Rate (known as the T.P.I.) pension, payable to an ex-serviceman who, as a result of war service, is blind, or is totally and permanently incapacitated so that he is unable to earn more than a negligible percentage of a living wage; the Intermediate Rate, payable to an ex-serviceman who, because of the severity of his incapacity accepted as related to war service, can work only part-time or intermittently and, in consequence, cannot earn a living wage; and the General Rate, payable to an ex-serviceman who has an incapacity accepted as related to war service but is not, because of that incapacity, prevented from being able to work full-time. General Rate pensions payable range from 10 per cent to 100 per cent of the maximum rate, according to the assessed degree of incapacity.

Pensions for Dependants. War pensions are also paid to the wives of incapacitated ex-servicemen and to dependent children. Such persons are paid at rates varying with the assessed degree of the particular ex-serviceman's incapacity. When the death of an ex-serviceman has been accepted as related to his war service, his widow qualifies for the war widow's rate of pension and for associated benefits, while his children receive pensions at 'orphan' rates and other benefits. If an ex-serviceman's death has not been accepted as related to war service, but at the time of death he was receiving, or is later adjudged to have been eligible to receive, a pension at the Special Rate (or one of certain other rates) his dependants qualify for pensions as if his death had been accepted as due to war service.

Allowances. Several allowances are provided to supplement war pensions. These allowances vary according to the type or severity of disablement and the special needs of the pensioner. They include attendant's allowance, sustenance allowance, recreation transport allowance and domestic allowance.

An education allowance is paid in respect of children of special rate pensioners and children of ex-servicemen who died as a result of war service.

Attendant's allowance is paid at either of two rates to certain classes of severely disabled ex-servicemen, including the war-blinded, the paralysed and some double amputees. Sustenance allowance is payable at either of two rates to an ex-serviceman who is prevented from following his usual occupation because he is undergoing medical treatment. The lower rate is paid where out-patient treatment is received for a period not exceeding twenty-eight days, and the sum of sustenance allowance and any war pension being paid is equal to the General (100 per cent) Rate war pension. The higher rate is equal to, or sufficient to bring any war pension payable up to, the Special (T.P.I.) Rate, and is payable in respect of in-patient treatment for disablement accepted as related to war service, or convalescence

immediately following that treatment or out-patient treatment for a continuous period in excess of twenty-eight days. Recreation transport allowance may be paid at either of two rates for recreation purposes to certain classes of seriously disabled ex-servicemen. Domestic allowance is payable to a war widow in addition to her pension if she has attained the age of fifty years, or is permanently unemployable, or has a dependent child who is under the age of sixteen years or is undertaking approved full-time education or training and is not receiving an adequate living wage.

Details of the rates applicable to war pensions and allowances at 31 March 1973, 31 October 1973 and 30 April 1974 are given in the following table.

WAR PENSIONS AND ALLOWANCES
RATES OF BENEFIT (a)
(\$)

Pension or allowance	Rate current at—		
	31 March 1973	31 October 1973	30 April 1974
	per week	per week	per week
War pensions—			
Ex-serviceman—			
Special (T.P.I.) rate	51.10	55.60	60.10
Intermediate rate	36.55	38.80	41.05
General rate	16.00	19.00	22.00
Wife	4.05	4.05	4.05
Each dependent child	1.38	1.38	1.38
War widow	21.50	23.00	26.00
War orphan—			
Where father dead	7.35	9.25	9.25
Where both parents dead	14.70	18.50	18.50
Allowances—			
Payments for certain amputations and/or			
loss of vision	1.80	2.25	2.25
	to	to	to
	35.10	36.60	38.10
Attendant's allowance—			
Higher rate	17.50	22.00	22.00
Lower rate	10.50	13.00	13.00
Sustenance allowance—			
Higher rate	51.10	55.60	60.10
Lower rate	16.00	19.00	22.00
Domestic allowance	8.50	9.50	9.50
Recreation transport allowance—	per month	per month	per month
Higher rate	25.00	32.00	32.00
Lower rate	12.50	16.00	16.00

(a) Pension rates current at dates prior to those shown in this table appear in *Western Australian Year Book*, No. 12—1973 (pages 240 and 555), and earlier issues.

The following table shows the number of war pensions current in Western Australia at 30 June of the years 1969 to 1973, together with amounts paid in pensions during the five-year period ended 30 June 1973.

WAR PENSIONS (a)—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of pensions current at 30 June—					
Incapacitated ex-servicemen	18,668	18,449	18,181	17,888	17,452
Dependants of incapacitated ex-servicemen	26,529	25,257	24,037	22,932	22,471
Dependants of deceased ex-servicemen	4,295	4,254	4,264	4,228	4,141
Miscellaneous (b)	34	33	32	31	29
Total	49,526	47,993	46,514	45,079	44,093
Amount paid in pensions during year (c)	\$'000 13,061	\$'000 12,811	\$'000 13,140	\$'000 14,413	\$'000 15,461

(a) Including pensions in respect of ex-servicewomen. (b) Pensions payable under Seamen's War Pensions and Allowances Act and 'Act of grace' pensions. (c) Includes widows' allowances.

Service Pensions and Allowances

Service pension is payable, subject to a means test similar to that applied to age and invalid pensions, to an ex-serviceman who served in a theatre of war and who has attained the age of sixty years or is permanently unemployable. It is payable to an ex-service-woman who served in a theatre of war or embarked for service abroad and has attained the age of fifty-five years or is permanently unemployable. It may also be paid to an ex-serviceman or woman suffering from pulmonary tuberculosis, irrespective of the area of service.

A service pension is therefore a broad equivalent of an age or invalid pension. The advantages to the recipient are the availability of pension five years earlier and access to a wide range of medical treatment services in the repatriation system. Service pensioners are eligible for the same range of pensions and allowances as age pensioners and the rates of benefit are the same.

The means test applying to service pensions paid to men and women aged seventy-five years and over was abolished in 1973.

SERVICE PENSIONS (a)—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of pensions current at 30 June—					
Ex-servicemen	5,951	6,282	6,314	6,385	7,299
Dependants of—					
Living service pensioners	863	1,004	972	970	1,765
Deceased service pensioners	482	494	477	504	529
Miscellaneous (b)	2	3	4	5	6
Total	7,298	7,783	7,767	7,864	9,599
Amount paid in pensions during year	\$'000 4,071	\$'000 4,491	\$'000 4,769	\$'000 5,298	\$'000 7,394

(a) Including pensions in respect of ex-servicewomen.

(b) 'Act of grace' pensions.

Student Children

Prior to amendments made to the Repatriation Act in 1973, benefits and allowances payable in respect of student children, *i.e.* dependent persons receiving full-time education at a school, college or university, ceased when the student reached the age of twenty-one years. Under the provisions of the *Repatriation Act 1973* and the *Repatriation Act (No. 2) 1973*, payment continues until the student ceases his studies or the parent or other person on whom he is dependent ceases to be eligible for a pension.

Payment of Benefits outside Australia

The *Repatriation Act (No. 2) 1973*, which came into operation on 8 May 1973, authorises the payment of a service pension in any country in which the pensioner may choose to live. This provision had previously applied only to war pensions.

NATIONAL HEALTH SERVICES

The *National Health Act 1953-1973* provides for expenditure from the National Welfare Fund in respect of a free general practitioner medical service to eligible pensioners and their dependants; hospital, medical and pharmaceutical benefits to the community generally; and subsidised health benefits for certain persons. Other services financed from the fund are the payment of domiciliary nursing care benefits for aged persons; the payment of handicapped children's benefits; the payment of allowances to sufferers from tuberculosis; reimbursement to State Governments of expenditure in relation to the diagnosis, treatment and control of tuberculosis; and a number of miscellaneous health services.

Hospital and Nursing Home Benefits

The payment of hospital and nursing home benefits is authorised under Part V of the National Health Act. Benefits are payable only in respect of treatment received in approved hospitals and approved nursing homes. For the purposes of the National Health Act,

premises which provide medical treatment, care and accommodation for sick persons are approved either as hospitals or as nursing homes depending mainly on their clinical standards and the type of patients accommodated.

Under a health insurance scheme, which is voluntary, the Australian Government provides a benefit of \$2 per day for a hospital in-patient who is insured with a registered hospital benefits fund against the cost of hospital treatment. Payment of eighty cents per day is made direct to the hospital for patients who are not contributors to an insurance fund. A benefit of \$2 per day is payable direct to hospitals in respect of patients, whether insured or uninsured, provided that no charge is made by the hospital.

In accordance with arrangements made with the States, pensioners enrolled in the Pensioner Medical Service and their dependants are entitled to free treatment in public wards of public hospitals. The Australian Government pays the hospitals a benefit of \$5 per day for each patient.

A benefit of \$3.50 per day is paid for all qualified patients in approved nursing homes, whether the patient is insured or not. A supplementary benefit of \$3 per day is payable for those patients in approved nursing homes who need and receive intensive nursing home care.

An additional nursing home benefit, subject to a statutory maximum, is payable by the Australian Government in respect of pensioners enrolled in the Pensioner Medical Service and their dependants. The rate of benefit varies as between States, the maximum rate payable in Western Australia being \$1.60 per day. Registered hospital insurance organisations may pay the additional benefit at the same rate in respect of their members.

The following table shows the amounts of benefit paid in Western Australia during each financial year from 1968-69 to 1972-73, and the number and membership of registered benefit organisations at 30 June in each year. It should be noted that the total number of persons covered by hospital benefit schemes is considerably higher than the number of members shown, as many members contribute on account of dependants as well as for themselves.

HOSPITAL AND NURSING HOME BENEFITS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Registered organisations—					
Number at 30 June	8	8	7	7	7
Membership at 30 June	317,049	330,298	349,359	*360,321	367,214
Amount of benefits paid during year—					
National Welfare Fund payments (a)—					
Hospital patients	\$'000 4,590	\$'000 4,834	\$'000 5,606	\$'000 7,804	\$'000 9,685
Nursing home patients	2,812	4,319	4,650	6,688	9,378
Total	7,402	9,153	10,256	14,492	19,063
Health insurance fund payments (b)	8,505	9,400	10,922	17,594	22,221

(a) For details see table on page 266.
account deficits and subsidised health benefits.

(b) Includes reimbursements paid by Australian Government in relation to special
* Revised.

A 'special account' system provides an assured rate of hospital fund benefits to contributors who would otherwise be excluded from fund benefits on account of organisations' rules covering pre-existing ailments, chronic illnesses and maximum fund benefit. One condition of payment is that the treatment in respect of which the fund benefit is paid is given in an approved hospital, although fund benefit is also payable in certain circumstances in respect of treatment given in approved nursing homes. If the payments from special accounts exceed the contributions credited to the account, the amount of the deficit is reimbursed by the Australian Government.

Australian residents who receive hospital treatment in recognised hospitals in overseas countries, while temporarily absent from Australia, are eligible to receive the government and fund benefits to which they would be entitled if the service were rendered in Australia.

Domiciliary Nursing Care Benefit

Domiciliary nursing care benefit, payable under the provisions of the *National Health Act 1972*, was introduced with effect from 1 March 1973. Benefit is paid at the rate of \$2 per day to assist in meeting the cost of home nursing for aged persons who are chronically ill and are being cared for in the private home of a relative or other approved person. The benefit applies to a patient who has attained the age of sixty-five years, has a continuing need for nursing care, and is receiving such care given by or under the supervision of a registered nurse.

Handicapped Children's Benefit

The *National Health Act 1968* provides for a handicapped children's benefit. Payment is made at the rate of \$3 per day on behalf of each handicapped child under sixteen years of age accommodated in a private non-profit institution, where the child receives medical or paramedical treatment and nursing care.

Medical Benefits

Under the voluntary health insurance scheme, the Australian Government provides benefits for medical services rendered to contributors to registered medical insurance funds and to their dependants. The benefits supplement those paid by the funds in respect of a proportion of the medical expenses, such as fees for medical and surgical treatment, incurred by contributors and their dependants. Benefits provided by the Australian Government are paid either on a fee-for-service basis or in the form of a subsidy representing a proportion of the payments made to medical practitioners by the funds under contract arrangements.

Under the 'special account' system referred to on page 240, contributors who would otherwise be excluded from fund benefits because of organisations' rules covering pre-existing or long-term ailments receive full fund benefits with the Australian Government reimbursing the organisations for any deficits incurred in providing benefits in such cases.

Australian residents who, while temporarily absent from Australia, receive medical attention by registered medical practitioners are entitled, if insured, to the government and fund benefit to which they would be entitled if the service were rendered in Australia.

The following table shows the number of medical services rendered in Western Australia to members of medical benefit organisations and their dependants during each financial year from 1968-69 to 1972-73. The number of organisations and their membership at 30 June in each year are also shown. It should be noted that the total number of persons covered by medical benefit schemes is considerably higher than the number of contributors, as many members subscribe for benefits on account of dependants as well as for themselves.

MEDICAL BENEFITS—WESTERN AUSTRALIA

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Registered organisations—					
Number at 30 June	8	8	8	8	8
Membership at 30 June	309,291	323,486	344,380	358,476	366,824
	'000	'000	'000	'000	'000
Number of medical services received during year—					
General practitioner services	1,760	2,050	1,886	2,136	2,276
Other	1,022	1,029	1,311	1,678	1,733
Total	2,782	3,079	3,197	3,814	4,009
Amount of benefits paid during year—	\$'000	\$'000	\$'000	\$'000	\$'000
National Welfare Fund payments (a)	5,600	6,373	9,782	13,800	15,957
Health insurance fund payments (b)	4,888	5,654	5,746	7,130	7,814

(a) For details see table on page 266.

(b) Includes reimbursements paid by Australian Government in relation to special account deficits and subsidised health benefits.

Under the Pensioner Medical Service scheme, qualified pensioners and their dependants are provided with a free general practitioner service. Specialist services are not provided. A small fee may be charged by practitioners who attend qualified patients outside normal surgery or visiting hours. Practitioners in the scheme are remunerated on a fee-for-service basis by the Australian Government.

Subsidised Health Benefits

The Australian Government provides assistance covering hospital, nursing home, medical, and pharmaceutical benefits to families whose weekly income does not exceed a specified amount; to persons in receipt of unemployment, sickness or special benefits; and to migrants during the first two months after their arrival in Australia.

The income eligibility limits are amended consequent upon variations in the minimum wage determined by the Australian Conciliation and Arbitration Commission and are prescribed by regulations under the National Health Act. In terms of an amendment to these regulations effective from 15 June 1973, families with weekly income of \$60·50 or less were entitled to full medical benefits, and also to hospital benefits equal to the cost of public ward treatment, without any payment of contributions. Families with income of more than \$60·50 but not more than \$65 per week were eligible for the same benefits on payment of contributions at one-third of the usual rate, while those with income of more than \$65 but not more than \$69·50 per week were eligible for the benefits on payment of contributions at two-thirds of the usual rate. The Commission granted an increase in the minimum wage in May 1974 and the income eligibility limits were raised. The revised income scale applicable to subsidised health benefits is shown in the *Appendix*.

Families qualifying for assistance may secure insurance cover higher than that needed to meet public ward hospital charges by paying the extra contributions involved.

Pharmaceutical Benefits

All persons receiving treatment by a registered medical practitioner are entitled to receive benefits through approved pharmaceutical chemists or, in certain circumstances, medical practitioners. Eligible pensioners and their dependants receive benefits free of charge. Persons eligible under the Subsidised Health Benefits scheme, to which reference is made above, receive benefits for a fee not exceeding fifty cents for each item dispensed. Other persons receive benefits for a fee not exceeding \$1 for each item. In addition, benefits are made available through approved hospitals and, by special arrangements, to persons living in isolated areas and persons who cannot be conveniently or efficiently supplied in accordance with the general provisions of the National Health Act.

The drugs and medicinal preparations available as pharmaceutical benefits are determined by the Minister on the advice of the Pharmaceutical Benefits Advisory Committee.

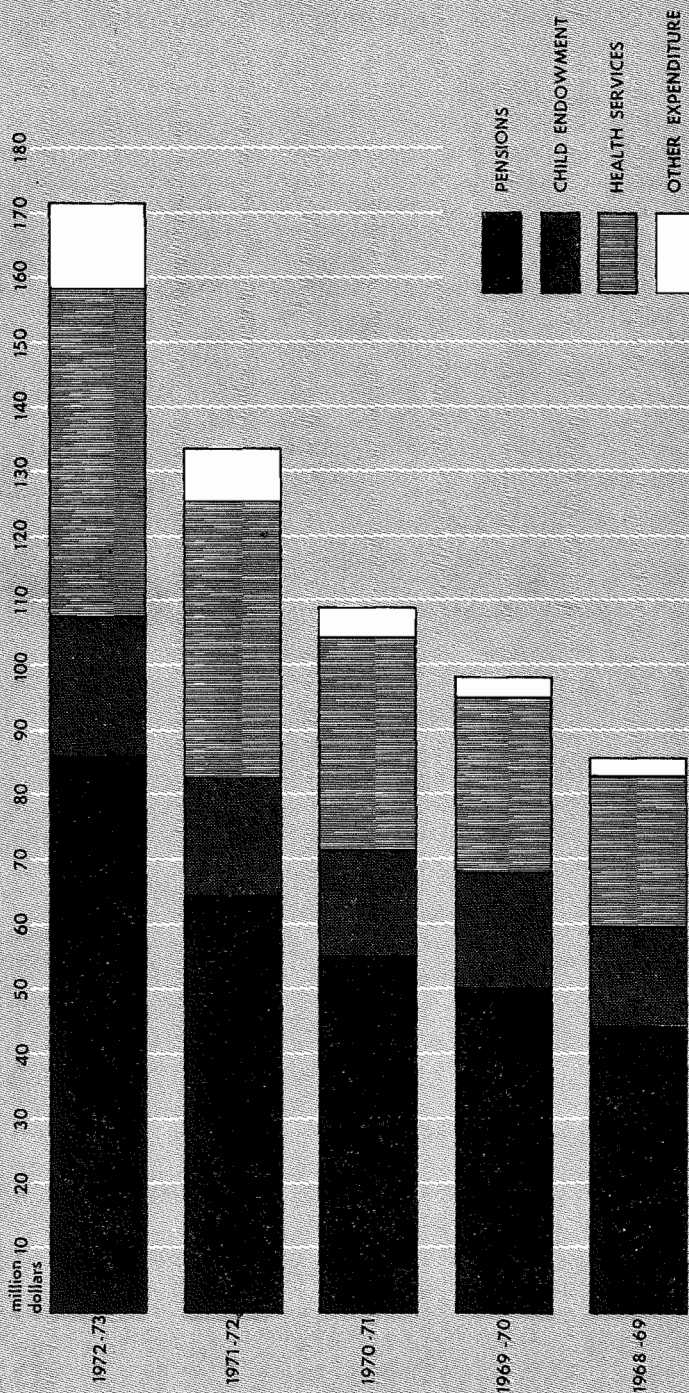
Free Milk for School Children

Under the provisions of the *States Grants (Milk for School Children) Act 1950*, milk was distributed free to school children throughout Australia, with the object of improving their diet. The Australian Government reimbursed the States for the cost of supplying one-third of a pint of milk each day of the school year to children under thirteen years of age, and also contributed one-half of the cost of related capital and incidental expenditure incurred by the States in the administration of the scheme. From the beginning of the 1974 school year the scheme was modified and the general distribution of milk discontinued.

Tuberculosis Medical Services and Allowances

Under the provisions of the *Tuberculosis Act 1948-1973* the Australian Government reimburses the States for all capital expenditure on buildings, furnishings, equipment and plant for the diagnosis, treatment and control of tuberculosis. It also reimburses the States for net maintenance expenditure on the diagnosis, treatment and control of tuberculosis in excess of that incurred during the base year 1947-48.

National Welfare Fund EXPENDITURE IN WESTERN AUSTRALIA 1968-69 to 1972-73



Provision is made in the Act for allowances to be paid, subject to a means test, to sufferers from tuberculosis and their dependants. The allowances are determined by the Director-General of Health, subject to the direction of the Minister. The rates payable at 1 January in each year from 1970 to 1974 are shown in the next table. In certain circumstances, additional benefits may be paid in the form of a mother's or guardian's allowance or supplementary assistance.

Miscellaneous Health Services

Other expenditure by the Australian Government on health services includes the cost of district health laboratory services, the free supply of certain prophylactic materials and biological products (e.g. poliomyelitis vaccine), the supply and maintenance of hearing aids for children and pensioners, subsidies to various voluntary organisations conducting home-nursing services that are assisted by the State Governments or local government authorities, the supply of artificially produced radio-active isotopes to private medical practitioners and hospitals for medical treatment purposes, and expenses in connection with the blood fractionation plant of the Commonwealth Serum Laboratories.

Summary of Rates, 1970 to 1974

The following table shows the daily amounts of hospital and nursing home benefits, domiciliary nursing care benefit and handicapped children's benefit being paid at 1 January of the years 1970 to 1974. The maximum weekly rates of tuberculosis allowances at each date are also shown.

NATIONAL HEALTH SERVICE PAYMENTS (a)
(\$)

Benefit or allowance (a)	At 1 January—				
	1970	1971	1972	1973	1974
Hospital benefits (per day)—					
Insured patient (b)	2.00	2.00	2.00	2.00	2.00
Uninsured patient	0.80	0.80	0.80	0.80	0.80
Patient treated without charge (c)	2.00	2.00	2.00	2.00	2.00
Pensioner patient in public hospital (d)	5.00	5.00	5.00	5.00	5.00
Nursing home benefits (per day)—					
Ordinary benefit	2.00	2.00	3.50	3.50	3.50
Supplementary benefit for intensive care	3.00	3.00	3.00	3.00	3.00
Additional benefit (e) .....	.....	.....	.....	1.60	1.60
Domiciliary nursing care benefit (per day) (f) .....	.....	.....	.....	.....	2.00
Handicapped children's benefit (per day)	1.50	1.50	1.50	1.50	3.00
Tuberculosis allowances—					
Maximum weekly rate—					
Sufferer with dependent spouse	29.75	30.75	33.75	37.75	40.75
Sufferer without spouse but with dependent child or children	23.00	23.50	25.25	28.00	29.50
Sufferer without dependants—					
While undergoing approved domiciliary treatment	18.25	18.75	20.50	23.25	24.75
While undergoing free hospital treatment	15.00	15.50	17.25	20.00	21.50
Payments in respect of dependent children (g)—					
First child	2.50	2.50	4.50	4.50	4.50
Each other child	3.50	3.50	4.50	4.50	4.50

(a) In addition to the benefits shown, payments from the National Welfare Fund in respect of National Health Services include medical benefits (see page 241), pharmaceutical benefits (see page 242), subsidised health benefits (see page 242) and miscellaneous health services (see above). (b) Member of an approved hospital insurance organisation. (c) Introduced 1 July 1970; benefit payable in respect of each non-pensioner patient, whether insured or uninsured, provided that no hospital fee is charged. (d) Benefit payable on account of a pensioner enrolled in the Pensioner Medical Service who is a patient in a public hospital and for whom no fees are charged. (e) Introduced 1 January 1973. Rate of benefit varies as between States; the amount shown is the maximum rate payable in Western Australia. (f) Introduced 1 March 1973. (g) In addition to child endowment.

DEPARTMENT FOR COMMUNITY WELFARE, WESTERN AUSTRALIA

The *Community Welfare Act, 1972*, which came into operation on 1 July 1972, establishes the Department for Community Welfare. The *Child Welfare Act Amendment Act (No. 2), 1972* abolishes the former Child Welfare Department and transfers its functions to the Department for Community Welfare. The *Aboriginal Affairs Planning Authority Act, 1972* repeals the *Native Welfare Act, 1963*. The welfare functions of the former Department of Native Welfare were transferred to the Department for Community Welfare with effect from 1 July 1972.

The functions of the Department for Community Welfare, as defined in the *Community Welfare Act, 1972*, are: '(a) to promote individual and family welfare in the community; (b) to prevent the disruption of the welfare of individuals and families in the community, and to mitigate the effects of any disruption; (c) to co-ordinate, assist and encourage the provision of social welfare services to the community, and for that purpose to confer and collaborate with other bodies and instrumentalities who offer, or may offer, a social welfare service; (d) to conduct, promote and encourage research into the problems of community welfare; (e) to conduct, promote and encourage programmes of training or rehabilitation, or which are otherwise of a nature that is concerned with the advancement of the welfare of particular individuals or groups in the community who are disadvantaged; (f) to consider and initiate, or to assist in, the provision and development of new or additional welfare services, whether of a general or specific nature, for individuals or groups within the community who are needy or disadvantaged; (g) to encourage the development of the greatest possible degree of service and administration at the local level, and to emphasise the value of preventive measures; (h) to provide assistance, where the Minister considers it to be necessary, when the welfare of any individual, family or group is threatened or in jeopardy; (i) to provide and, where appropriate, to manage facilities, which may include land, buildings and specialized appliances, for specific purposes consistent with the objects of this Act; (j) generally, to administer and give effect to the provisions of this Act and to carry out such other functions as may be prescribed, or as the Minister may direct.'

The Acts administered by the Director of the Department for Community Welfare, subject to any direction of the Minister, are the Community Welfare Act, the Child Welfare Act, the Welfare and Assistance Act, the Adoption of Children Act, and the Guardianship of Children Act.

STATE RELIEF PAYMENTS

Under the provisions of the *Welfare and Assistance Act, 1961*, the State Government, through the Department for Community Welfare, extends financial assistance to indigent persons not immediately eligible for benefits paid by the Australian Government under its social security programme. These relief payments are made primarily to ensure that dependent children do not suffer hardship from the indigence of parents or guardians. Those assisted include deserted wives, unmarried mothers, divorced women, widows having the care of children, and families where the husband is unable to provide adequate support because of sickness, unemployment, age or imprisonment.

The rates of benefit payable by the State Government appear in the table on page 249. State monetary assistance to a woman not receiving a pension or other benefit from the Australian Government may be increased by \$2 per week if she has a child aged under six years or an invalid child aged under sixteen years. She may be eligible for an additional allowance up to a maximum of \$4 per week if paying rent or lodging charges.

Other aid provided by the State for persons in need includes free travel for country people requiring medical treatment in the metropolitan area and a contribution towards the cost of school requisites for children of women receiving financial assistance. In certain circumstances, the burial of indigent persons is arranged at State expense.

Deserted wives and unmarried mothers applying to the Department for assistance are given advice concerning the legal redress available to them and it is usual for application to be made to a Summary Relief Court or a Children's Court for an order requiring the husband or the father to provide maintenance. Court orders are enforceable throughout Australia and in certain overseas countries.

Under the *States Grants (Deserted Wives) Act 1968* the Australian Government shares on a \$1 for \$1 basis with the States the cost of helping certain mothers of families without a breadwinner where the mother is ineligible for a Class A widow's pension or the supporting mother's benefit (see page 233). The main groups of mothers assisted are deserted wives, wives of prisoners, and unmarried mothers. Assistance is provided during the first six months after the birth of a child or the date of separation. After the first six months, a woman may qualify for either a Class A widow's pension or a supporting mother's benefit.

The grant by the Australian Government to a State is equal to half the cost of the approved assistance paid by the State to each eligible person but may not exceed half the amount that would have been payable to such a person under the Social Services Act had she been eligible for a Class A widow's pension.

FAMILIES GRANTED STATE GOVERNMENT FINANCIAL ASSISTANCE (a)

Category	Number of applications approved				
	1968-69	1969-70	1970-71	1971-72	1972-73
Deserted wives	718	905	1,274	1,510	2,557
Foster mothers	103	110	103	255	260
Husband imprisoned	184	202	272	463	521
Husband sick or unemployed	1,230	1,204	1,716	3,492	3,788
Special cases	119	118	125	36	33
Unmarried mothers	201	254	475	610	916
Divorced women	26	32	18	36	108
Husband pensioner	3		33	47	
Widows	72	47	45	72	
Total	2,656	2,872	4,061	6,521	8,183

(a) Figures for years prior to 1972-73 refer to the Child Welfare Department, and those for 1972-73 to the Department for Community Welfare; see letterpress *Department for Community Welfare* on pages 244-5.

CHILD WELFARE

Under the provisions of the *Child Welfare Act, 1947-1972* the State Government, through the Department for Community Welfare, is responsible for the care of State wards and children placed under supervision or released on probation by Children's Courts. For the purposes of the Act, a child is defined as 'any boy or girl under the age of eighteen years'. Institutions caring for children, as well as children brought to Western Australia under child migration schemes, are subject to supervision by the Department, as also are foster-mothers who have in their care children under six years of age and are required under the Act to be licensed for this purpose. Among other functions of the Department are the arranging of legal adoptions and the licensing of children employed in street trading and in public entertainment. A provision of the Child Welfare Act vests in the Department the right to decide which institution or what form of treatment is appropriate to the needs of a child committed by a Children's Court to the care of the Department for treatment, discipline and training.

Children's Courts are established at Perth and at other centres throughout the State and have jurisdiction in all cases where children under eighteen years of age are involved whether as offenders or as being neglected or destitute. The Courts also have jurisdiction to deal with adults committing certain specified offences against children. The public may be excluded from Court hearings and names of juvenile offenders are withheld from publication unless with the express authority of the Court. Adults charged with certain indictable offences against children may forgo the right to trial by jury and agree to be dealt with summarily by Children's Courts. This power to exercise summary jurisdiction is designed to eliminate as far as possible the necessity for children to appear in open courts as witnesses in cases dealing with sex offences. A Children's Court may commit such offenders for sentence by the Supreme Court of Western Australia or The District Court of Western Australia.

Children guilty of minor offences may be cautioned, fined, bound over, placed on probation, or dismissed without a conviction being recorded. A Court may declare a child to be neglected or destitute and may order the child to be committed to the care of the Department for Community Welfare or released on probation. Children found guilty of offences punishable by imprisonment may be committed to the care of the Department, released on security given by parents, or released on probation under the supervision of the Department. Those guilty of less serious or first offences are generally placed in the care of their parents or suitable guardians under appropriate supervision by officers of the Department for Community Welfare.

Departmental Expenditure. The following table gives details of annual expenditure of the Child Welfare Department during the four-year period ended 30 June 1972, and of the Department for Community Welfare during 1972-73.

DEPARTMENTAL EXPENDITURE (a)
(\$'000)

Nature of expenditure	1968-69	1969-70	1970-71	1971-72	1972-73
Administration	687	853	1,128	1,486	3,110
Departmental institutions	938	1,213	1,617	2,153	2,862
Maintenance of wards	517	751	1,060	1,214	1,543
Maintenance of migrant children	5	6	4	5	4
Adoption of children .....	.....	41	62	84	82
Outdoor relief (b)	451	576	904	1,624	2,935
Unemployment relief	34	22	29	71	67
Parole classes	6	3	4	8	8
Burial of indigents	11	11	10	15	48
Reserves (Aboriginal housing) (c) .....	.....	.....	.....	.....	194
Total expenditure	2,649	3,476	4,818	6,660	10,853
Total revenue	241	228	280	306	490
Net expenditure	2,408	3,248	4,538	6,354	10,363

(a) See letterpress *Department for Community Welfare* on pages 244-5. (b) Assistance to women with dependent children and to the infirm. (c) Prior to 1972-73 a function of the former Department of Native Welfare.

Supervision of Children. A child committed to the care of the Department for Community Welfare or to the custody of the Director of the Department for Community Welfare becomes a ward of the Department. A ward may be placed in an institution, boarded out with a relative or other approved person, paroled or placed in suitable employment. The Director of the Department for Community Welfare has authority to place wards of working age in employment or apprenticeship. The *Immigration (Guardianship of Children) Act 1946-1973* (Commonwealth) provides that the Minister for Immigration shall be the guardian of migrant children under the age of twenty-one years who are not in the care of a parent or other relative. In Western Australia this function is exercised, under delegation, by the Director of the Department for Community Welfare.

Some children, other than wards, are also under the supervision of the Department. These comprise children under six years of age who may be either in institutions or in the care of licensed foster-mothers.

Maintenance of Children. The Department for Community Welfare makes payments at the rates shown in the table on page 249 to foster-parents and institutions having State wards in their care. The British Government pays \$2.50 per week for each British migrant child in an institution or boarded out and the State Government pays an additional amount of \$1.50 per week where the child is unaccompanied. A further grant of \$1 per week for each child maintained is paid to the institutions by the State Lotteries Commission. Where an institution refuses assistance from the Commission on religious or moral grounds the State Government may grant an equivalent allowance to the institution for each ward maintained. All institutions and foster-parents having the care of children receive Commonwealth child endowment payments. Under an 'emergency' foster placement scheme, children are placed for short periods in approved private homes while awaiting permanent placement.

Parents or step-parents are required to contribute towards the maintenance of wards in institutions or boarded out.

Day Care Centres. Any person who provides day-to-day care of children under the age of six years must have a licence issued by the Department for Community Welfare in accordance with regulations which specify standards relating to premises, furnishings, equipment, staffing and the general conduct of centres. An advisory service is provided by the Department to assist those wishing to establish centres, and to ensure that the regulations are observed and that good standards of child care are maintained.

The Australian Government, under the provisions of the *Child Care Act 1972*, provides financial assistance to certain non-profit organisations for the establishment and operation of child care centres primarily for the children of working or sick parents or of parents who for other reasons are unable to care for them during the day. Capital grants are payable to eligible organisations for the purchase, erection, extension or alteration of buildings (including land cost) for use as a child care centre. Recurrent grants are payable to encourage the employment of qualified staff and to enable the centres to offer reduced fees in respect of children from families in financial need. The Act also provides for grants to be made available to suitable bodies for research and evaluation of matters relating to child care.

Adoption of Children. Any person wishing to adopt a child must first obtain the written approval of the Director of the Department for Community Welfare. Legal adoptions may be arranged by the Department or privately by solicitors. In either case, the Director is required to investigate the suitability of applicants and an order for adoption must be obtained from a Judge of the Supreme Court of Western Australia.

Institutions. The State Government subsidises homes for children in Western Australia. Most of these institutions are conducted by religious organisations. All institutions having the care of wards (including migrant children) or private children under six years of age are subject to the supervision of the Department for Community Welfare.

Departmental institutions provide short-term accommodation for children in need of care and children awaiting proceedings in Children's Courts; assessment facilities for children coming into the care of the Department; treatment centres in the nature of reformatories; and hostel accommodation. Children aged from three years to seventeen years are provided for. Wards under three years of age requiring short-term care are placed by arrangement at Ngala Mothercraft Home and Training Centre, South Perth.

The following table shows the number of admissions to departmental institutions during the five-year period to 30 June 1973. It is important to note that the figures relate to *admissions* and not to *distinct persons*, i.e. a child has been counted once for each time he or she was admitted.

ADMISSIONS TO DEPARTMENTAL INSTITUTIONS (a)

Institution	1968-69	1969-70	1970-71	1971-72	1972-73
Child Welfare Reception Home, Mount Lawley	763	992	964	1,033	1,209
Bridgewater Care and Assessment Centre, Applecross	154	211	342	508	583
Hillston Farm School, Stoneville	140	199	233	211	224
Longmore Remand and Assessment Centre, Bentley	1,103	1,329	1,747	1,893	1,700
McCall Treatment Centre, Cottesloe .....	.....	.....	.....	19	14
Nyandi, Bentley .....	.....	30	122	112	55
Riverbank, Caversham	90	123	173	231	289
Total	2,250	2,884	3,581	4,007	4,074

(a) See letterpress *Department for Community Welfare* on pages 244-5.

Employment of Children. The *Child Welfare Act, 1947-1972* provides that children may not engage in street trading except under licence granted by the Department for Community Welfare. The issue of licences is restricted to boys aged twelve years and over and it is an offence to employ an unlicensed child. Most of the licences issued are for the sale of newspapers.

The Act provides further that children under the age of sixteen years may not take part in any form of public entertainment for profit or reward unless under licence, except in the case of an occasional entertainment for the benefit of a school or charitable or patriotic object. Most of these licences are issued for concerts arranged by dancing teachers and other tutors.

SUMMARY OF RELIEF AND WELFARE PAYMENTS

The following table shows the maximum weekly rates of allowances and benefits paid in terms of the Welfare and Assistance Act and the Child Welfare Act. The rates current at dates prior to those shown in the table appear in the *Western Australian Year Book*, No. 12—1973 (page 251) and earlier issues.

STATE GOVERNMENT RELIEF AND WELFARE PAYMENTS (a)
MAXIMUM WEEKLY RATES
(\$)

Allowance or benefit	Rate current at—		
	31 March 1973	31 October 1973	30 April 1974
Woman not receiving Australian Government assistance	21·50	23·00	26·00
Additional payments in respect of dependent children—			
First child	8·50	9·00	9·00
Second child	4·50	5·00	5·00
Third child	6·50	5·00	5·00
Fourth and each subsequent child	4·50	5·00	5·00
Widow pensioner with dependent children (b) (c)	2·00	....	....
Age or invalid pensioner—			
Payments in respect of dependent children (c)—			
Where there is one child	2·00	....	....
Where there are two or more children	2·50	....	....
Unemployment and sickness benefits (d)—			
Married person	8·25	8·25	8·25
Dependent spouse	3·00	3·00	3·00
Each dependent child up to and including the seventh	1·50	1·50	1·50
Wards of the State—			
Foster children in families—			
Each child	8·00	8·00	13·00
Additional payment for each child aged 15 years or over	1·00	1·00	1·00
In institutions—			
Each child	9·50	9·50	12·50
Foster child (e) in institution or private home	5·50	8·50	8·50

(a) Payments made in terms of the Welfare and Assistance Act and the Child Welfare Act. (b) Woman receiving widow's pension and having three or more dependent children in her care. (c) Payment discontinued 8 August 1973. (d) Paid only in respect of the first week of unemployment or sickness, during which period benefits are not payable under the Social Services Act (Commonwealth). (e) Foster child not being a ward of the State.

Chapter V—continued

Part 6—Law, Order and Public Safety

The law in force in Western Australia is contained in The Statutes of Western Australia, comprising legislation passed by the Western Australian Parliament and certain Imperial Acts which have been adopted, and in the Commonwealth Acts in so far as they apply to Western Australia. Under the Constitution of the Commonwealth of Australia, 'when a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid'.

The Legal Profession

The Barristers' Board, constituted under the *Legal Practitioners Act, 1893-1973*, comprises the Attorney-General as chairman; the Solicitor-General; all Queens' Counsel residing and practising in the State; persons who retire from an office of Judge of the Supreme Court of Western Australia and are resident in the State; and five practitioners of at least three years' standing and practice in the State, elected annually by the practitioners on the roll of the Supreme Court residing and practising in the State.

The Board has the power to regulate and control the examination and admission of articled clerks, and the examination of all candidates for admission as practitioners. The certificate of the Board is necessary before any person may be admitted to practice. An applicant for admission having qualifications acquired outside Western Australia must satisfy the Board that he possesses qualifications substantially equivalent to those required for the admission of persons who qualify in Western Australia.

The Crown Law Department

The Crown Law Department is administered, subject to the control of the Minister, by the Under Secretary for Law. The Department is responsible for the Supreme Court Central Office, the District Court Registry, Court Offices throughout the State (except Children's Courts), the Crown Solicitor's Office, the Office of Titles, the Public Trust Office, the Companies Registration Office, and the Probation and Parole Service. The Department, in addition to administering the Acts which come under the portfolio of the Minister, conducts Crown legal business and, when required, acts for and advises all other State Government Departments and instrumentalities.

Law Reform Commission of Western Australia

The Law Reform Commission of Western Australia was established by the *Law Reform Commission Act, 1972* which came into operation on 19 January 1973. The Commission took over the functions of the Law Reform Committee appointed by the Minister for Justice in January 1968 to recommend means 'to update and improve the laws of Western Australia'.

The Commission conducts research into those aspects of the law which may be referred to it by the Attorney-General as being in need of reform. In the course of investigation comment is invited from interested persons or groups.

Reports prepared by the Commission and presented to the Parliament by the Attorney-General become public documents. During the period to 30 June 1973, twenty-three reports were submitted (twenty by the former Committee and three by the Commission) and seven of these had resulted in legislation.

Parliamentary Commissioner for Administrative Investigations

The *Parliamentary Commissioner Act, 1971*, which came into operation on 12 May 1972, provides for the appointment of a Parliamentary Commissioner for Administrative Investigations with the powers of a Royal Commission as specified in the *Royal Commissions Act, 1968*. The first Commissioner was appointed on 24 April 1972.

The Commissioner is empowered to investigate administrative actions taken by or on behalf of certain government authorities. The Act applies to all Departments of the Public Service, excluding officers of the establishment of the Governor and of the Agent General for Western Australia (London), to all local government authorities, and to other specified authorities. It does not apply to the Supreme Court of Western Australia, The District Court of Western Australia, other courts of law in the State, a Judge of the Supreme Court or of the District Court, a commissioner of any court, a stipendiary magistrate, a coroner, the Auditor-General, the Parliamentary Privileges Act, or any decision of the Cabinet or of a Minister of the Crown.

LAW COURTS

The principal courts operating in Western Australia are the High Court of Australia, the Supreme Court of Western Australia, The District Court of Western Australia, the Magistrates' and Coroners' Courts, the Summary Relief Court and the Licensing Court of Western Australia. In Chapter X, Part 1, reference is made to the Australian Industrial Court, the Australian Conciliation and Arbitration Commission, the Western Australian Industrial Appeal Court, and The Western Australian Industrial Commission.

High Court of Australia

The High Court of Australia is the Federal Supreme Court and its powers are defined in the Commonwealth of Australia Constitution Act and in the *Judiciary Act 1903-1973*. The High Court consists of a Chief Justice and six other Justices. Sittings are held in the capital city of each State as occasion may require. The High Court exercises both original and appellate jurisdiction, acting as a court of appeal for Australia.

An appeal may lie from a judgment of the High Court of Australia to the Judicial Committee of the Privy Council in London. However, the *Privy Council (Limitation of Appeals) Act 1968-1973* (Commonwealth) limits the matters which may be the subject of special leave of appeal from a decision of the High Court. The Act provides, in part, that leave of appeal 'may be asked only in a matter in which the decision of the High Court was a decision that (a) was given on appeal from a decision of the Supreme Court of a State given otherwise than in the exercise of federal jurisdiction; and (b) did not involve the application or interpretation' of the Australian Constitution, or of a Commonwealth law (including any ordinance, rule, regulation or by-law made under such a law).

Supreme Court of Western Australia

The Supreme Court of Western Australia, as constituted under the *Supreme Court Act, 1935-1971*, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court in both civil and criminal matters is exercised by a single Judge, sitting alone or with a jury, unless it is provided that an action must be brought before a Full Court. Criminal cases are heard before a jury. Criminal sittings of the Supreme Court are held at Perth each month from February to December, and also in January if the Chief Justice so directs. Civil sittings and Full Court sittings are held at times fixed by the Court from year to year. There are regular sittings at Albany, Bunbury, Geraldton and Kalgoorlie, and at other country centres as required.

Any two or more Judges together comprise a Full Court except that when sitting as a court of criminal appeal there must be an uneven number of Judges. Appeals are heard against judgments of the Supreme Court and the District Court as well as against decisions of the magistrates in lower courts.

Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the *Judiciary Act* 1903-1973 (Commonwealth), and may also be made direct to the Privy Council.

The District Court of Western Australia

The District Court of Western Australia is constituted under the provisions of the *District Court of Western Australia Act, 1969-1972* and consists of a Chairman of Judges and such other Judges as may from time to time be appointed. The Act, which came into operation on 1 April 1970, repeals the *Courts of Session Act, 1921*. The jurisdiction of the Court is exercised by a Judge sitting alone or with a jury. Criminal cases must be heard before a Judge and jury. Criminal sittings of the District Court are held at Perth each month from February to December, five times a year at Albany, Bunbury, Geraldton and Kalgoorlie, and at five other centres when required. Civil sittings are held concurrently with criminal sittings in Perth, and immediately following the criminal sittings at other centres except at Bunbury where special civil sittings are held four times a year.

Civil jurisdiction exists broadly up to a maximum of \$10,000, and criminal jurisdiction in respect of indictable offences except those for which the maximum penalty exceeds fourteen years' imprisonment.

Appeals from a District Court Judge lie, in the civil jurisdiction, to the Full Court of the Supreme Court and, in the criminal jurisdiction, to the Court of Criminal Appeal.

Magistrates' and Coroners' Courts

In addition to their usual functions, magistrates act as coroners and mining wardens where required. Two or more Justices of the Peace sitting together in petty sessions may deal with cases which could be decided by a magistrate sitting alone.

COURTS OF PETTY SESSIONS. Courts of Petty Sessions, which are established in terms of the *Justices Act, 1902-1973*, are held at centres of population throughout the State. Minor offences are dealt with summarily, but a person charged with an indictable offence may be committed to a higher court for trial or sentence if there is sufficient evidence to justify this course.

CHILDREN'S COURTS. The *Child Welfare Act, 1947-1972* provides for the establishment of Children's Courts, and the appointment of special magistrates, to deal with offenders under the age of eighteen years and to hear certain specified cases of offences against children. Certain cases of offences concerning children may be remanded for hearing or committed for sentence before the Supreme Court. The public may be excluded from Children's Court hearings and names of juvenile offenders are withheld from publication unless with the express authority of the Court. Children's Courts operate in Perth, and at other centres as required. Further reference to Children's Courts appears in the section *Child Welfare* in Part 5 of this Chapter.

SUMMARY RELIEF COURT. The Summary Relief Court is established under the provisions of the *Married Persons and Children (Summary Relief) Act, 1965-1972* and is empowered to make orders providing for separation, payment of maintenance, legal custody of a child and access to a child.

LOCAL COURTS. Local Courts, which are established in terms of the *Local Courts Act, 1904-1973*, are held throughout the State to determine minor civil issues, largely the recovery of small debts. Jurisdiction is limited in most cases to claims not exceeding \$1,000.

CORONERS' COURTS. The powers of coroners are derived from the *Coroners Act, 1920-1960*. Coroners' Courts may be held to inquire into the circumstances of sudden or unnatural deaths or the cause and origin of fires. A coroner may charge a person with a major offence and commit him for trial at a higher court.

Licensing Court of Western Australia

The Licensing Court of Western Australia is established under the provisions of the *Liquor Act, 1970-1973*. The Court comprises three members, including a chairman,

appointed by the Governor. Except as otherwise provided by the Act, the Court may be constituted, and its jurisdiction may be exercised, by any two members. The Court has exclusive jurisdiction to hear and determine all applications under the Liquor Act in respect of licences, provisional certificates and permits relating to the sale, supply and consumption of liquor. Appeal against a direction, determination or order of the Court lies to the Supreme Court, but only where the appeal involves a question of law.

COURT PROCEEDINGS

Higher Courts

The term *Higher Courts*, as used in the tables on pages 254 and 256, refers to courts presided over by a Judge. The general jurisdiction of the higher courts includes appeals from the lower courts, cases of crime committed from lower courts, and civil cases. Under the *Bankruptcy Act 1966-1973* (Commonwealth) the Supreme Court of Western Australia is invested with jurisdiction in bankruptcy, and under the *Matrimonial Causes Act 1959-1973* (Commonwealth) with jurisdiction in divorce and related matters.

Civil Proceedings

Particulars of civil cases dealt with by the courts in the five years ended 31 December 1972 are shown in the following table.

CIVIL PROCEEDINGS

Particulars	1968	1969	1970	1971	1972
SUPREME COURT OF WESTERN AUSTRALIA—					
Bankruptcy (a)—					
Number of—					
Petitions—					
Filed	228	233	233	299	419
Withdrawn or dismissed	4	4	2	5	6
Sequestration orders—					
On debtors' petitions	218	206	218	289	387
On creditors' petitions	4	18	11	3	21
Assignments and arrangements without sequestration	52	60	64	98	110
Assets and liabilities—					
Under sequestration orders—					
Assets \$'000	230	495	847	637	1,300
Liabilities \$'000	1,013	1,081	1,924	2,322	3,478
Under assignments and arrangements without sequestration—					
Assets \$'000	745	896	1,098	2,483	2,839
Liabilities \$'000	941	1,100	1,421	2,702	3,806
Divorce (b)—					
Number of—					
Petitions filed	1,003	1,065	1,206	1,454	1,634
Decrees granted	812	873	890	1,068	1,244
Other proceedings—					
Number of—					
Writs commencing actions	1,773	2,264	2,330	1,521	2,002
Judgments—					
With trial	143	101	69	72	76
Without trial	637	700	695	415	563
Amounts awarded \$'000	3,845	3,358	3,368	4,187	5,296
DISTRICT COURT OF WESTERN AUSTRALIA (c)—					
Number of—					
Writs commencing actions ....	....	....	802	2,253	2,205
Judgments—					
With trial ....	....	....	51	53	131
Without trial ....	....	....	243	952	1,060
Amounts awarded \$'000	....	....	n.a.	n.a.	3,619
THIRD PARTY CLAIMS TRIBUNAL (d)—					
Number of claims filed	409	694	736	758	334
Amounts awarded \$'000	528	2,082	2,713	3,161	1,458
LOCAL COURTS—					
Number of—					
Plaints entered	57,689	60,854	64,727	69,026	71,757
Verdicts for plaintiffs	24,430	36,734	27,348	27,830	29,699
Amounts awarded \$'000	2,812	3,263	3,810	4,144	4,599
CORONERS' COURTS—					
Number of inquests—					
On persons	234	206	192	193	174
On fires	2	5	9	11	8

n.a. denotes 'not available'.

(a) Figures relate to year ended 30 June; for further details see pages 301-2. (b) For further details see pages 158-60.
(c) See letterpress on page 252. (d) Abolished 13 July 1972, and functions transferred to Supreme Court, District Court, and Local Courts, as appropriate.

CONVICTIONS IN COURTS

Number of Convictions

It is important to bear in mind when considering the particulars shown in the tables on pages 254-6 that the figures relate to the *number of convictions* recorded and not to the *number of persons* convicted. Thus, where a person is convicted on more than one count each conviction so recorded has been included in the statistics.

HIGHER COURTS AND MAGISTRATES' COURTS—NUMBER OF CONVICTIONS

Class of offence	1968	1969	1970	1971	1972
HIGHER COURTS					
Offences against the person—					
Murder	1	5	7	6	16
Attempted murder	1	2	....	3	2
Manslaughter	5	10	19	20	12
Negligent driving causing death	4	5	6	4	....
Sex offences	24	16	25	49	40
Assault	62	30	35	36	36
Other	5	7	14	7	7
Total	102	75	106	125	113
Offences against property—					
Breaking, entering and stealing	622	674	812	855	645
Stealing, receiving	113	58	103	109	144
Other	29	50	54	45	68
Total	764	782	969	1,009	857
Forgery and offences against the currency	41	5	50	196	24
Offences against good order	1	1	15	16	55
Other offences	44	29	47	26	32
GRAND TOTAL	952	892	1,187	1,372	1,081
MAGISTRATES' COURTS (a)					
Offences against the person—					
Sex offences	183	186	180	212	195
Assault	871	1,067	1,214	1,466	1,391
Other	3	1	4	2	7
Total	1,057	1,254	1,398	1,680	1,593
Offences against property—					
Breaking, entering and stealing	1,755	1,835	2,376	2,748	4,124
Unlawfully on premises	723	933	1,003	1,160	768
Stealing, receiving	6,159	7,286	7,947	9,783	9,164
Unlawfully using motor vehicles	1,524	1,279	2,253	3,076	3,048
Wilful damage	743	868	837	1,072	1,096
Other	34	99	43	80	88
Total	10,938	12,300	14,459	17,919	18,288
Forgery and offences against the currency	70	68	68	177	177
Offences against good order—					
Drunkenness	11,146	11,970	12,612	16,197	16,379
Disorderliness	2,763	3,090	3,071	4,012	4,142
Vagrancy	638	710	699	828	660
Escaping legal custody	182	256	260	272	315
Offences against police	1,018	1,118	1,112	1,354	1,438
Other	143	226	243	407	499
Total	15,890	17,370	17,997	23,070	23,433
Other offences—					
Breach of—					
Traffic Act (b)	43,929	43,428	34,882	40,388	41,255
Native Welfare Act	615	1,038	965	372	99
Liquor laws	2,393	2,837	1,730	1,440	1,491
Health laws	184	166	223	214	184
Gaming	156	154	308	305	370
Industrial offences	119	83	234	96	69
Maintenance offences	677	886	606	751	1,290
Taxation offences	504	758	914	1,258	1,742
Other offences	5,360	5,614	6,115	5,878	5,682
Total	53,937	54,964	45,977	50,702	52,182
GRAND TOTAL	81,892	85,956	79,899	93,548	95,673

(a) Including Children's Courts.
256.

(b) Excludes minor traffic offences not subject to court process; see letterpress on page

Convictions of Juveniles

The term *juvenile*, as used in relation to the statistics given in this Part, means a person under the age of eighteen years. Convictions of juvenile offenders are included in the figures shown in the tables on page 254 and are given separately in the tables below and on page 256.

The following table shows the number of convictions of juvenile offenders in Children's Courts in Western Australia during the five-year period ended 31 December 1972. A classification by age of offender is given in the succeeding table.

OFFENCES BY JUVENILES—NUMBER OF CONVICTIONS (a)

Class of offence	1968	1969	1970	1971	1972
Offences against the person—					
Sex offences	76	93	71	94	86
Assault	134	138	184	193	232
Other	2	1	2	1	5
Total	212	232	257	288	323
Offences against property—					
Breaking, entering and stealing	1,720	1,781	2,359	2,697	3,546
Unlawfully on premises	199	266	340	431	276
Stealing, receiving	2,428	3,135	3,365	3,484	3,361
Unlawfully using motor vehicles	970	718	1,568	2,209	2,244
Willful damage	350	423	367	445	482
Other	15	61	29	57	65
Total	5,682	6,384	8,028	9,323	9,974
Forgery and offences against the currency	8	11	29	9	9
Offences against good order—					
Drunkenness	193	241	220	396	543
Disorderliness	265	348	305	407	529
Vagrancy	36	55	54	59	63
Escaping legal custody	19	32	38	30	51
Offences against police	176	169	197	224	317
Other	37	58	35	89	102
Total	726	903	849	1,205	1,605
Other offences—					
Breach of—					
Traffic Act	2,644	3,211	3,689	4,517	4,678
Liquor laws	481	628	356	461	465
Other offences	193	186	284	207	238
Total	3,318	4,025	4,329	5,185	5,381
GRAND TOTAL	9,946	11,555	13,492	16,010	17,292

(a) Comprises convictions in Children's Courts.

CONVICTIONS OF JUVENILES, 1972 (a)
AGES OF OFFENDERS

Class of offence	Age last birthday (years)											Total
	8	9	10	11	12	13	14	15	16	17	Not stated	
Against the person	16	64	133	222	432	22	33	50	75	124	17	323
Against property	16	64	133	222	432	909	1,386	1,750	2,422	2,345	295	9,974
Forgery, etc.	16	64	133	222	432	8	30	94	4	4	39	9
Against good order	16	64	133	222	432	8	30	94	4	4	39	1,605
Other offences (b)	16	64	133	222	432	8	30	94	4	4	39	5,381
Total	16	64	133	222	432	8	30	94	4	4	39	17,292

(a) Comprises convictions in Children's Courts.
and breaches of liquor laws.

(b) The figures shown comprise mainly convictions for traffic offences

Summary of Convictions in Courts

The following table gives a summary of convictions in courts in Western Australia during each of the five years to 31 December 1972, together with an analysis according to class of offence of convictions recorded during the year ended 31 December 1972.

HIGHER COURTS AND MAGISTRATES' COURTS—NUMBER OF CONVICTIONS

Particulars	Higher courts			Magistrates' courts			Convictions of juveniles (a)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
FIVE YEARS ENDED 31 DECEMBER 1972									
Year—									
1968	901	51	952	72,839	9,053	81,892	9,129	817	9,946
1969	867	25	892	76,404	9,552	85,956	10,365	1,190	11,555
1970	1,158	29	1,187	69,890	10,009	79,899	12,166	1,326	13,492
1971	1,235	137	1,372	81,984	11,564	93,548	14,302	1,708	16,010
1972	1,042	39	1,081	84,691	10,982	95,673	15,424	1,868	17,292
YEAR ENDED 31 DECEMBER 1972									
Class of offence—									
Against the person	102	11	113	1,495	98	1,593	300	23	323
Against property	837	20	857	16,204	2,084	18,288	8,935	1,039	9,974
Forgery, etc.	24	....	24	143	34	177	7	2	9
Against good order	48	7	55	18,982	4,451	23,433	1,208	397	1,605
Other offences	31	1	32	47,867	4,315	52,182	4,974	407	5,381
Total	1,042	39	1,081	84,691	10,982	95,673	15,424	1,868	17,292

(a) Included in figures shown under *Magistrates' courts*.

Regulations under the Traffic Act allow fines to be imposed without court action for minor traffic offences. Similar provisions apply under parking facilities legislation and municipal by-laws. These minor offences (which are, of course, excluded from the tables relating to court convictions) numbered 83,146 in 1968, 117,436 in 1969, 154,307 in 1970, 176,994 in 1971, and 200,723 in 1972.

LIQUOR LICENCES

The following table shows the number of liquor licences of the several types in force in Western Australia. The figures shown for 30 June of the years 1969 and 1970 relate to licences granted under the provisions of the *Licensing Act, 1911-1969*. The Licensing Act was repealed, with effect from 1 July 1970, by the *Liquor Act, 1970*.

LIQUOR LICENCES IN FORCE

Type of licence (a)	At 30 June—		Type of licence (b)	At 30 June—		
	1969	1970		1971	1972	1973
Publican's general	417	419	} Hotel	463	467	469
Wayside house	39	39				
Australian wine, beer and spirits	1	1	Limited hotel	15	17	19
Limited hotel	7	11	Australian wine	39	36	26
Australian wine	45	46	} Store	227	239	251
Australian wine, bottle	8	8				
Gallon	213	212	Packet	14	12	10
Packet	9	9	Railway refreshment room .....	....	....	....
Railway refreshment room .....	....	....	Wholesale spirit merchant's	45	46	55
Spirit merchant's	47	45	Brewer's	4	4	4
Brewer's	4	4	Club	264	270	276
Club	255	259	Canteen	25	29	27
Canteen	13	15	Restaurant	47	63	75
Restaurant	32	41	Tavern .....	....	1	9
			Winehouse	2	7	17
			Cabaret	17	22	26
			Theatre	1	1	3
			Vigneron .....	....	....	....
Total	1,090	1,109	Total	1,163	1,214	1,267

(a) As described in the *Licensing Act, 1911-1969*.(b) As described in the *Liquor Act, 1970-1973*.

By a provision of the *Government Railways Act, 1904-1973*, The Western Australian Government Railways Commission is authorised to lease railways premises for the sale of refreshments, subject to the provisions of the *Liquor Act, 1970-1973*.

A licence applying to premises at Perth International Airport is issued in terms of the *Airports (Business Concessions) Act 1959-1973* (Commonwealth).

POLICE

The Western Australian Police Force comprises nine main branches under the direction of the Commissioner of Police. The Commissioner is appointed by the Governor under the provisions of the *Police Act, 1892-1972* and is responsible to the Minister for Police.

For the administration of the Uniformed Branch, the State is divided into three metropolitan districts and eight country districts, each under the direction of a commissioned officer. At 30 June 1972 there were, in addition to the Uniformed Branch and the Women Police, a number of specialised branches, including the Criminal Investigation Branch, the Liquor and Gaming Branch, the Firearms and Inquiries Branch and the Traffic Branch.

The following table shows the numbers and classification of members of the Western Australian Police Force at 30 June of each year from 1969 to 1972.

POLICE FORCE—NUMBER AND CLASSIFICATION (a)

Date and classification	Branch and number of officers							
	Uniformed Branch	Women Police	Criminal Investigation Branch	Liquor and Gaming Branch	Firearms and Inquiries Branch	Traffic Branch	Other Branches	Total (a)
At 30 June—								
1969	1,021	23	125	*22	9	249	37	1,486
1970	1,071	29	146	*23	12	263	40	1,584
1971	1,051	35	151	*25	12	299	39	1,612
1972—								
Superintendent	11	....	1	1	1	2	....	16
Senior Inspector	9	....	2	....	....	3	....	14
Inspector	8	1	1	....	....	4	3	17
Sergeant	215	3	64	4	3	44	13	346
Constable	885	34	101	29	8	202	30	1,289
Total	1,128	38	169	34	12	255	46	1,682

a) In addition to the numbers shown there were a Commissioner of Police and a Deputy Commissioner of Police for each year; a Chief Inspector of Police for 1968; and an Assistant Commissioner of Police and a Chief Superintendent of Police for 1969 and later.

* Revised.

The Uniformed Branch comprises the main body of the Police Force and is responsible for the routine maintenance of law and order throughout the State. Where required, officers of the Branch act as Clerks of Courts and perform special duties for other government authorities.

The Women Police are employed mainly in police duties concerning women and children. Policewomen are stationed at Perth, Fremantle, Midland, Albany, Bunbury, Geraldton and Kalgoorlie.

The Criminal Investigation Branch is centred in Perth, with several sub-branches in the metropolitan area and the principal country towns. The Branch is equipped with radio patrol cars and the usual facilities for work on fingerprints, photography and ballistics. Special staffs attached to the Criminal Investigation Branch are responsible for security and for police work in connection with gold stealing, pillaging and thefts from retail shops.

The Liquor and Gaming Branch is concerned mainly with the enforcement of the liquor laws and laws for the suppression of vice and gaming.

The Firearms and Inquiries Branch is responsible for the licensing of firearms throughout the State. It also makes inquiries concerning the suitability of applicants for licences to operate as land agents, auctioneers, money-lenders, inquiry agents, employment brokers, and debt collectors.

The Traffic Branch is responsible for the regulation of traffic in the Metropolitan Traffic Area and in certain country areas. In other parts of the State these functions are performed by the local government authorities. Motor vehicle licences and motor vehicle drivers' licences are issued by police officers throughout the State on behalf of the Department of Motor Vehicles. The Traffic Branch is responsible for the patrol of major highways to check commercial vehicles for overloading and for excessive speed. Officers of the Branch instruct school children in the principles of road safety and assist the National Safety Council to conduct a school where young persons are instructed in the proper use of motor cycles. Traffic Education Classes, although held mainly for the instruction of minor offenders against traffic laws, also admit members of the public who attend voluntarily.

Police and Citizens' Youth Clubs are established by the Police Department to provide recreational facilities for young people and to give them an appreciation of civic responsibilities.

PRISONS

Under the provisions of the *Prisons Act, 1903-1971*, the Director of the Department of Corrections is responsible, subject to the control of the Minister, for the administration of prisons in Western Australia. In addition to prison establishments under the control of the Department of Corrections, there are some police gaols administered jointly by the Department of Corrections and the Police Department.

The principal institution is Fremantle Prison and there are regional prisons at Albany, Broome, Geraldton and Kalgoorlie. Barton's Mill Prison, Brunswick Junction Prison, Bunbury Rehabilitation Centre, Byford Inebriates Centre, Karnet Rehabilitation Centre, Pardelup Prison Farm and Wooroloo Training Centre are minimum security institutions. Bandyup Women's Training Centre, situated at Middle Swan about twelve miles from Perth, is a medium security institution. It was opened in March 1970 and women formerly accommodated at Fremantle Prison were transferred there.

The following table shows the number of receivals for penal imprisonment in gaols in Western Australia during each of the five years to 30 June 1972. It is important to note that the figures relate to *receivals* and not to *distinct persons*, i.e. a prisoner has been counted once for each time he or she was received.

PENAL IMPRISONMENT—NUMBER OF RECEIVALS (a)

Institution	Year ended 30 June—									
	1968		1969		1970		1971		1972	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Prisons—										
Fremantle (b)	2,790	373	3,097	409	3,199	....	3,637	....	3,853	....
Albany	297	70	231	62	188	49	255	35	198	42
Bandyup (c) ....	....	....	....	....	....	455	....	467	....	351
Broome	100	15	144	18	149	8	235	43	332	56
Brunswick Junction (d) ....	....	119	19	....	134	....	124	....	142	....
Geraldton	483	119	421	66	487	22	486	34	510	49
Kalgoorlie (e)	295	45	513	102	398	90	456	117	632	195
Total	3,965	622	4,425	657	4,555	624	5,193	696	5,667	693
Police gaols	1,126	276	883	218	903	275	1,203	461	1,726	635
GRAND TOTAL	5,091	898	5,308	875	5,458	899	6,396	1,157	7,393	1,328

(a) Excludes imprisonment for debt and receivals of persons on remand. (b) Includes figures for Barton's Mill Prison, Bunbury Rehabilitation Centre (opened 5 February 1971), Karnet Rehabilitation Centre, Karnet Inebriates Section, Pardelup Prison Farm, Wooroloo Training Centre (opened 5 March 1970), and Byford Inebriates Centre (opened 19 April 1972). (c) Opened 13 March 1970. (d) Opened 6 March 1969. (e) On 29 February 1968 the former police gaol was closed and simultaneously gazetted as a prison.

Fremantle Prison is divided into separate sections for prisoners on remand or awaiting trial, juvenile prisoners, and other sentenced prisoners. There are workshops where prisoners are employed in bootmaking, carpentry, printing, tailoring, tinsmithing and

welding, making cement products, and in arts and crafts work. Prisoners can also qualify as cooks and bakers. A school is conducted by teachers supplied by the Education Department, and tuition by correspondence is also available. The section at Fremantle Prison which was occupied by female prisoners before their transfer to Bandyup Women's Training Centre is now used as an assessment centre.

At Barton's Mill Prison the development of trade training workshops is continuing, with the aim of replacing the declining activity of firewood cutting. Farming is carried on at Pardelup Prison Farm and Karnet Rehabilitation Centre, and inmates receive instruction in animal husbandry, market gardening, and the operation and maintenance of farm machinery. Karnet Rehabilitation Centre is a dual-purpose institution with accommodation in two dormitory blocks, one of which houses committed inebriates. The other block provides for selected inmates, mainly first offenders, for whom accommodation has been increased by the erection of single cabins adjacent to the dormitory block. Bunbury Rehabilitation Centre receives inmates who have been selected at the Fremantle Prison assessment centre for educational courses and vocational training. Brunswick Junction Prison is used for short-term offenders from the south-west of the State. Byford Inebriates Centre was opened in April 1972 to accommodate committed inebriates. Short-term offenders from the metropolitan area are sent to the Wooroloo Training Centre.

Police gaols are established in Perth and at other centres. They are used for the detention of short-sentence prisoners and prisoners awaiting trial. In addition, provision is made for holding prisoners for short periods at police stations throughout the State.

The following table shows the number of prisoners, excluding trial and remand prisoners and debtors, in gaols in Western Australia at 30 June in each year from 1968 to 1972.

PRISONERS IN GAOL

Institution	At 30 June—									
	1968		1969		1970		1971		1972	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Prisons—										
Fremantle	461	37	523	55	439	....	438	....	447	....
Albany	92	....	60	4	59	....	64	....	63	....
Bandyup (a) .....	....	....	....	....	....	54	....	57	....	48
Barton's Mill	93	....	123	....	123	....	114	....	70	....
Broome	36	4	37	1	53	2	61	8	76	2
Brunswick Junction (b) .....	....	....	21	....	24	....	22	....	25	....
Bunbury (c) .....	....	....	....	....	....	....	31	....	63	....
Byford (d) .....	....	....	....	....	....	....	....	....	24	....
Geraldton	105	....	99	....	122	1	109	....	82	1
Kalgoorlie	48	2	40	5	32	1	28	....	35	2
Karnet—										
Inebriates Section	53	....	51	....	56	....	58	....	36	....
Other	70	....	79	....	64	....	42	....	66	....
Pardelup	79	....	65	....	42	....	46	....	51	....
Wooroloo (e) .....	....	....	....	....	42	....	122	....	90	....
Total	1,037	43	1,098	65	1,056	58	1,135	66	1,128	54
Police gaols	67	3	48	3	53	7	55	5	59	28
GRAND TOTAL	1,104	46	1,146	68	1,109	65	1,190	71	1,187	82

(a) Opened 13 March 1970.
(e) Opened 5 March 1970.

(b) Opened 6 March 1969.

(c) Opened 5 February 1971.

(d) Opened 19 April 1972.

PROBATION AND PAROLE SERVICE

The Probation and Parole Service, a branch of the Crown Law Department, is constituted under the provisions of the *Offenders Probation and Parole Act, 1963-1971*.

The Act establishes a Parole Board of five members, comprising a Judge of the Supreme Court as chairman, the Director of the Department of Corrections, and three members appointed by the Governor.

Probation officers carry out supervision of offenders placed on probation by the courts. A court may require the Chief Probation Officer to report on an offender before passing

sentence. These pre-sentence reports are used by the courts as an aid in determining the penalty to be imposed.

The Act requires that where a person is sentenced to imprisonment for twelve months or longer the court shall, unless special circumstances make it inappropriate, fix a minimum term during which the convicted person is not eligible to be released. The court is given discretionary power to fix a minimum term where the sentence is for less than twelve months. Provision is made for the reduction of a minimum term, as a reward for good conduct or industry. Where no minimum term has been fixed, remission of up to 25 per cent of the sentence may be allowed for diligence and good conduct.

The Parole Board is empowered to release on parole a prisoner who has served a minimum term fixed by a court, or a prisoner being detained at the Governor's pleasure.

The Governor may direct the release on parole of a prisoner sentenced to imprisonment for life, a prisoner undergoing a sentence of imprisonment for life commuted from a sentence of death, or an unconvicted person held in custody during the Governor's pleasure following acquittal because of unsoundness of mind. The Parole Board is required to submit to the Minister, at prescribed intervals, a report and a recommendation concerning such prisoners.

Parole officers establish contact with prisoners serving a minimum term (*i.e.* the non-parole period of the sentence) during their imprisonment, prepare a case history of each prisoner for the information of the Parole Board, and supervise paroled persons during the parole period.

The following table gives particulars of the operations of the Probation and Parole Service during the five-year period ended 30 June 1973.

PROBATION AND PAROLE SERVICE

Particulars	Year ended 30 June—				
	1969	1970	1971	1972	1973
PROBATION					
Number of persons—					
Under supervision at beginning of period	751	1,023	1,202	1,211	1,160
Admitted to probation during period	572	609	623	710	777
Under supervision during period	1,323	1,632	1,825	1,921	1,937
Cancellation of probation	59	92	156	155	168
Completion of probation	241	338	458	606	509
Under supervision at end of period	1,023	1,202	1,211	1,160	1,260
PAROLE					
Number of persons—					
Under supervision at beginning of period	288	336	384	420	440
Released on parole during period	348	337	401	419	491
Under supervision during period	636	673	785	839	931
Cancellation of parole	105	102	154	159	166
Completion of parole	195	187	211	240	223
Under supervision at end of period	336	384	420	440	542

PUBLIC SAFETY

National Safety Council

The National Safety Council of Western Australia was founded in January 1946 following discussions among office bearers and senior officials of the Royal Automobile Club of Western Australia and police and education authorities about the creation of an organisation for the prevention of accidents.

Although the Council has been primarily concerned with road traffic safety and training courses associated with it, a Home Safety Division was established in 1963 and a Water Safety Division in 1965 and these also conduct a wide range of practical training courses. An Industrial Safety Division was also formed but now operates as a separate organisation although it is affiliated with the Council.

The National Safety Council of Western Australia is the State member division of the National Safety Council of Australia and is also represented on such bodies as the Federal Publicity Advisory Committee on Education in Road Safety and the State Road Traffic Safety Authority.

The Council aims at the prevention of accidents by the co-ordination of the efforts of relevant organisations and by an educational programme in accident prevention techniques. It pursues its objectives through the voluntary service of executive members, the financial support of the Government, and the staff and facilities of the Safety Instructional Centre at Mount Lawley. This Centre, situated on eighteen acres of land close to Perth, comprises a complete road system and a comprehensive office complex including a projection theatre and lecture rooms.

Fire Protection

Western Australian Fire Brigades Board. The *Fire Brigades Act, 1942-1972* constitutes the Western Australian Fire Brigades Board of ten members. The Board comprises two members appointed by the Governor, one of whom is president of the Board; three members elected by the insurance companies carrying on business in the State; one member elected by the Council of the City of Perth; three members elected by other local government authorities; and one member elected by the registered volunteer fire brigades. The general duties of the Board are to take, superintend and enforce all necessary steps for the prevention and extinguishing of fires and the protection of life and property from fire, and the control of all fire brigade premises and of all fire brigades.

WESTERN AUSTRALIAN FIRE BRIGADES BOARD—CALLS RECEIVED

Year	Number of fire calls							Number of calls for special services	Total calls		
	False alarms	Fires causing negligible damage	Chimney fires	Other fires causing damage estimated at—							
				Less than \$200	\$200 to \$10,000	\$10,001 to \$200,000	More than \$200,000				
METROPOLITAN FIRE DISTRICT (a)											
1968-69	1,176	1,874	60	118	215	11	....	215	3,669
1969-70	1,392	2,198	56	96	215	30	1	314	4,302
1970-71	1,839	2,039	52	94	267	21	4	340	4,656
1971-72	1,983	2,610	41	93	288	29	1	364	5,409
1972-73	2,028	3,010	37	112	346	25	2	436	5,996
OTHER FIRE DISTRICTS											
1968-69	168	584	61	63	117	8	1	30	1,032
1969-70	213	621	71	73	119	6	....	61	1,164
1970-71	209	518	61	71	96	8	....	57	1,020
1971-72	180	741	50	61	145	8	....	77	1,262
1972-73	222	1,046	52	65	147	13	....	80	1,625
WESTERN AUSTRALIA											
1968-69	1,344	2,458	121	181	332	19	1	245	4,701
1969-70	1,605	2,819	127	169	334	36	1	375	5,466
1970-71	2,048	2,557	113	165	363	29	4	397	5,676
1971-72	2,163	3,351	91	154	433	37	1	441	6,671
1972-73	2,250	4,056	89	177	493	38	2	516	7,621

(a) As defined in the Fire Brigades Act.

Sixteen permanent and two volunteer brigades operate in the metropolitan fire district centred on the City of Perth. Permanent brigade personnel serve with volunteer brigade personnel in five large country centres, and volunteer brigades provide town fire protection at sixty-eight other centres. At 30 June 1973, the Board had 585 employees and there were 1,702 volunteer brigade officers and firemen.

Bush Fires Board. The Bush Fires Board, which is constituted under the *Bush Fires Act, 1954-1973*, consists of thirteen members appointed by the Governor on the recommendation of the Minister. It comprises the Under Secretary for Lands as chairman; six persons nominated by the Country Shire Councils' Association of W.A.; and one person nominated by each of the following: the Minister for Forests, the Minister for Agriculture, The Western Australian Government Railways Commission, the Fire and Accident Underwriters' Association of Western Australia, the Commissioner of Police, and the Associated Sawmillers and Timber Merchants of Western Australia. The principal functions of the Board are to administer the Bush Fires Act; to report to the Minister on methods of preventing or extinguishing bush fires; to recommend the prohibited burning times to be declared for the whole or any part of the State for any yearly period; to carry out such fire prevention measures as it considers necessary; to carry out research in connection with fire prevention and control; and to conduct publicity campaigns for the purpose of improving fire prevention measures.

The Board operates through its staff of liaison officers based in country centres, each officer being the fire-protection member for his area. These officers promote fire protection by the exercise of co-ordination, liaison and advisory functions.

Protective fire-breaks are compulsory throughout the agricultural areas and bush fire brigades carry out programmes of protective burning.

At 30 June 1973 there were 918 registered bush fire brigades with 4,499 officers. In addition, there were 2,422 bush fire control officers. During the 1972-73 season, 613 fires were reported and the area destroyed was almost 50,000 hectares. The principal cause was 'escape of burning-off operations', which accounted for more than one-quarter of all fires. Other fires were caused mainly by burning rubbish, and sparks from vehicles, tractors and cigarettes. The cause of almost one-third of fires reported was unknown.

CHAPTER VI—FINANCE

Part 1—Public Finance

COMMONWEALTH-STATE FINANCIAL RELATIONS

The Financial Agreement of 1927

Under the terms of the Financial Agreement, the Australian Government took over from the States their public debts existing at 30 June 1927 and assumed responsibility for all future loan raisings by the Australian and State Governments. The Commonwealth also agreed to contribute annually for a period of fifty-eight years from 1 July 1927 an amount of \$15,169,824 towards the interest payable on the States' debts, Western Australia's share of this amount being \$946,864.

Sinking Funds established by the Financial Agreement between the Commonwealth and the States are designed to redeem the States' debts as follows: (a) debt existing at 30 June 1927, in a period of fifty-eight years thereafter; (b) debt incurred after 30 June 1927 (except for the purpose of financing revenue deficits), in a period of fifty-three years from the date of creation of the debt; (c) debt incurred to finance revenue deficits for the years 1929-30 to 1934-35, in a period of thirty-nine years from 30 June 1944; and (d) debt incurred to finance other revenue deficits, in a period of approximately seventeen years from the date of its creation.

These Sinking Funds are under the control of the National Debt Commission. Receipts of the Funds consist mainly of contributions from the Consolidated Revenue Funds of the Australian and State Governments. The Commonwealth and the States make annual contributions of $\frac{1}{8}$ per cent and $\frac{1}{4}$ per cent, respectively, towards the redemption of debt existing at 30 June 1927, and further annual contributions of $\frac{1}{4}$ per cent each towards the redemption of debt created since that date, with the exception of debt incurred to finance revenue deficits. In respect of debt incurred to finance revenue deficits during the years 1929-30 to 1934-35, the Commonwealth makes an annual contribution of $\frac{1}{4}$ per cent and the States an annual contribution of $\frac{3}{4}$ per cent. In respect of debt incurred to finance all other revenue deficits, contributions are at a rate of not less than 4 per cent per annum, and are the sole responsibility of the States concerned. In addition to the foregoing contributions, the States make an annual contribution of $4\frac{1}{4}$ per cent on the face value of securities redeemed from their Sinking Funds, which in effect accumulates the original contributions and ensures that funds are approximately sufficient to repurchase or redeem the full amount of all debt in a period of fifty-three years.

Subject to the Financial Agreement, the contributions of the Commonwealth and the States in respect of the States' debts are applied by the Commission to the redemption of the public debts of the States, the redemption of loans raised by the Commonwealth for and on behalf of the States, and the repurchase of securities issued in respect thereof. Under the provisions of the Financial Agreement, repurchased or redeemed securities must be cancelled, and the debts of the States are reduced accordingly.

The Australian Loan Council

The Australian Loan Council was established by the Financial Agreement Act of 1928 to co-ordinate the public borrowings of the Australian and State Governments. The Council has as its Chairman the Prime Minister of Australia, or a Minister nominated by him, and the other members are the Premiers of the States or, in the absence of a Premier, a Minister nominated by him. The Commonwealth and each State submits to the Council a programme of its desired loan raisings during each financial year, including the amount of any revenue deficit to be funded. The Australian Government's borrowings for defence purposes are expressly excluded from its submissions to the Council. If the Council decides that the total amount of the loan programme

for a year cannot be borrowed at reasonable rates and conditions, it decides the amount to be borrowed during the year, and may by unanimous decision allocate this amount between the Commonwealth and the States. Where the members fail to arrive at a unanimous decision the Commonwealth is entitled to a maximum of one-fifth of the total sum to be borrowed. Of the balance, each State is entitled to an amount in the proportion which its net loan expenditure during the preceding five years bears to the aggregate for all the States.

Grants to the States

Debt Charges Assistance. The *States Grants (Debt Charges Assistance) Act* 1970 provides Commonwealth financial assistance to the States in connection with interest and sinking fund contributions payable in terms of the Financial Agreement. The assistance is in the form of an annual grant to meet charges on \$200 million of the States' debts in each year from 1970-71 to 1974-75. The grants amount in total to \$172.6 million in respect of \$1,000 million of existing debt. Western Australia's share (\$1.11 million in 1970-71, \$2.21 million in 1971-72, \$3.32 million in 1972-73, \$4.42 million in 1973-74, and \$5.53 million in 1974-75) amounts to \$16.6 million in respect of \$96.1 million of debt. It was agreed at a Premiers' Conference in June 1970 that the \$1,000 million of States' debts to which the Act relates would be formally transferred from the States to the Australian Government in June 1975.

The Grants Commission. Section 96 of the Commonwealth Constitution provides that the States may be granted financial assistance. In 1933 the Commonwealth Parliament passed the Commonwealth Grants Commission Act establishing a Commission to inquire into and report on applications made by States for grants of financial aid.

In each year from 1934-35, in respect of which the Commission made its first recommendation, Western Australia received a Special Grant until it ceased to be a claimant State from and including the year 1968-69, in accordance with an agreement made between the Commonwealth and the State at a Premiers' Conference in June 1968. Following this agreement the Commonwealth was authorised by the *States Grants Act* 1968 to pay to Western Australia an amount of \$15.5 million in each of the years 1968-69 and 1969-70, in addition to the Financial Assistance Grant (see below), as a substitute for any Special Grant that might have been recommended by the Commission for those years. For subsequent years, additional grants on a reducing basis were provided by the *States Grants Act* 1970 (\$12.5 million for 1970-71), and the *States Grants Act (No. 2)* 1971 (\$9.5 million for 1971-72, \$6.5 million for 1972-73, \$3.5 million for 1973-74, and \$0.5 million for 1974-75).

The *Grants Commission Act* 1973, which repeals the *Commonwealth Grants Commission Act* 1933 and later amendments, continues the principle of making special assistance available to a State for its own purposes and, in addition, authorises the provision of assistance to a State for local government purposes.

Other Grants. As well as the Special Grants paid to some States on the recommendation of the Grants Commission, annual Financial Assistance Grants are made by the Australian Government to every State. Special revenue assistance has been provided in some years in addition to the Special Grants and Financial Assistance Grants. Details of payments made to Western Australia are shown in the next table under the heading *General revenue grants*.

Other Financial Assistance

As well as providing general financial assistance to the States by means of grants, the Australian Government allocates to them funds for specific purposes, as shown in the next table which gives details of payments made to Western Australia during the five-year period ended 30 June 1972. Social service benefits, national health benefits and homes savings grants are paid from the National Welfare Fund (see table on page 266). In addition, financial assistance for housing and war service land settlement is provided from Loan Fund.

FINANCIAL ASSISTANCE TO WESTERN AUSTRALIA (a) (\$'000)

Nature of payment	1967-68	1968-69	1969-70	1970-71	1971-72
Payments of a revenue nature—					
Financial Agreement—					
Interest on State debts	947	947	947	947	947
Sinking Fund contribution	1,986	2,106	2,258	2,384	2,557
Debt Charges Assistance Grants	....	....	....	1,106	2,211
General revenue grants—					
Financial Assistance Grants	96,152	(b)123,796	(b)138,835	(b)163,313	(b)170,960
Special Grants (c)	15,518	582	....	....	....
Special Financial Assistance Grants	....	1,296	1,545	5,030	6,014
Education—					
University	2,652	2,833	3,281	3,900	4,594
Colleges of advanced education	776	912	1,929	2,333	2,920
Independent (i.e. non-government) schools	....	....	862	1,682	2,064
Research grants	257	276	323	296	307
Aboriginal advancement	....	....	10	26	26
Development of resources and assistance to industry—					
Agricultural extension services	294	375	493	598	589
Bovine brucellosis and tuberculosis eradication	....	....	64	119	192
Natural disaster payments	....	50	42	....	....
Minor agricultural research	....	....	....	....	14
Health—					
Aboriginal advancement	....	....	10	100	93
Blood transfusion services	80	75	76	79	106
Welfare—					
Aboriginal advancement	....	....	10	14	104
Housekeeper services	2	2	....	*....	....
Home care services	....	....	....	4	10
Non-metropolitan unemployment relief	....	....	....	....	2,024
Other—					
Road safety practices	19	19	19	25	25
Coal mining industry long service leave	40	45	47	53	55
Total	118,724	133,313	150,752	182,010	195,812
Payments of a capital nature—					
Transport and communication—					
Commonwealth Aid Roads Acts	28,597	30,537	32,940	36,270	39,250
Beef cattle roads grants	1,400	1,451	1,168	1,000	1,600
Eyre Highway—Contribution to maintenance	25	25	25	25	25
Railway standardisation agreement (d)	19,458	8,362	7,900	5,236	1,988
Education—					
Government schools	....	....	....	....	620
Universities	567	734	2,048	384	1,571
Teachers colleges	1,817	582	201	3	1,132
Pre-school teachers colleges	....	14	161	....	....
Colleges of advanced education	1,304	874	1,050	1,903	1,899
Technical training	1,323	437	957	804	747
Science laboratories in schools	912	921	921	921	911
School libraries	....	168	596	779	765
Aboriginal advancement	....	203	160	250	290
Development of resources and assistance to industry—					
Water supplies (e)	1,500	2,050	2,000	1,792	2,000
Softwood forestry (e)	450	500	859	424	56
Investigation and measurement of water resources	260	273	312	572	670
Ord River irrigation agreement	100	5,100	5,850	5,847	4,760
Natural disaster payments	....	....	130	31	....
Rural reconstruction (f)	....	....	....	....	6,500
Marginal dairy farms (g)	....	....	....	352	478
Health—					
Mental institutions—Contribution to capital expenditure	148	375	241	395	454
Tuberculosis Act—Reimbursement of capital expenditure	10	....	....	12	88
Nursing homes	....	....	....	337	44
Aboriginal advancement	....	75	75	5	192
Disposal of ships' garbage	....	....	....	....	104
Welfare—					
Aboriginal advancement	....	....	....	205	550
Dwellings for aged pensioners	....	....	....	700	224
Senior citizens' centres	....	....	....	....	30
Other—					
Aboriginal advancement—Housing	....	547	990	1,080	1,245
Capital assistance grants	....	....	....	18,680	20,470
Exmouth township development (h)	417	....	59	584	12
Migrant centre	357	411	60	65	23
Total	58,645	53,639	58,703	*78,656	88,698
GRAND TOTAL	177,369	186,952	209,455	*260,665	284,510

(a) Excludes subsidy and bounty payments. (b) Includes payments in place of a Special Grant: 1968-69, \$15,500,000; 1969-70, \$15,500,000; 1970-71, \$12,500,000; 1971-72, \$9,500,000. (c) See letterpress *The Grants Commission* on page 264. (d) Includes repayable advances: 1967-68, \$11,446,000; 1968-69, \$4,919,000; 1969-70, \$4,647,000; 1970-71, \$3,080,000; 1971-72, \$1,169,000. (e) Repayable advances. (f) Includes repayable advance of \$4,875,000. (g) Includes repayable advances: 1970-71, \$159,000; 1971-72, \$239,000. (h) Includes repayable advances: 1969-70, \$59,000; 1970-71, \$269,000; 1971-72, \$12,000. * Revised.

National Welfare Fund

The National Welfare Fund was established in 1943 by the National Welfare Fund Act passed by the Commonwealth Parliament in that year. The purpose of the fund

is to provide for the payment of social service benefits, health benefits and homes savings grants. The fund receives each year by transfer from the Consolidated Revenue Fund an amount equal to the payments made. Further reference to the fund will be found on page 230.

NATIONAL WELFARE FUND—PAYMENTS IN WESTERN AUSTRALIA (a)
(\$'000)

Pension, allowance, benefit or other payment	1967-68	1968-69	1969-70	1970-71	1971-72
Social services—					
Age and invalid pensions	36,418	39,404	44,637	48,979	57,374
Widows' pensions	4,346	4,786	5,600	6,172	7,180
Funeral benefits	90	96	102	107	108
Maternity allowances	605	648	645	743	724
Child endowment—					
Children under 16 years of age	14,845	14,644	(b) 17,004	15,498	17,056
Student children		896	(b) 890	926	1,132
Unemployment, sickness and special benefits—					
Unemployment benefits	304	309	407	828	2,945
Sickness benefits	420	389	508	719	1,159
Special benefits—					
Ordinary	33	97	123	151	194
Migrant ....		....	....	(c)	(c)
Sheltered employment allowances (d)	5	37	74	74	96
Rehabilitation service—					
Invalid pensioners, etc.	193	196	254	331	448
Training scheme for widow pensioners (e) ....	....	12	30	55	54
Personal care subsidy (f) ....	....	....	89	123	144
Delivered meals subsidy (g) ....	....	....	20	29	28
Assistance for deserted wives (h)	35	215	342	544	981
Total, Social services	57,295	61,729	70,725	75,279	89,623
Health services—					
Hospital benefits—					
Pensioners	2,316	2,375	2,246	2,058	2,333
Uninsured patients—					
In public hospitals	153	150	148	94	100
In private hospitals ....		....	12	10	8
Insured patients	1,620	1,722	1,756	1,895	2,223
Patients treated without charge (i)—					
In public hospitals ....	....	....	....	42	22
In private hospitals ....	....	....	....	(c)	(c)
Special account deficits	287	343	600	789	1,340
Subsidised health benefits (j) ....	....	....	72	720	1,778
Nursing home benefits—					
Public nursing homes—					
Ordinary benefit	855	840	972	964	1,454
Supplementary benefit (k) ....	....	181	623	667	780
Private nursing homes—					
Ordinary benefit	1,367	1,453	1,638	1,712	2,813
Supplementary benefit (k) ....	....	337	1,085	1,306	1,641
Medical benefits—					
Pensioners	1,172	1,168	1,394	1,345	1,835
Insured patients	4,013	4,345	4,817	8,229	11,652
Special account deficits	80	87	132	85	102
Subsidised health benefits (j) ....	....	....	29	123	211
Pharmaceutical benefits—					
Pensioners	2,143	2,507	2,720	2,814	3,324
General benefits	3,663	4,364	4,950	5,681	5,985
Public hospitals	1,286	1,803	2,133	2,679	3,065
Other	25	27	34	41	44
Tuberculosis campaign—					
Allowances	55	44	39	30	32
Maintenance and surveys	807	602	789	770	875
Handicapped children's benefits (l) ....	....	3	64	60	41
Milk for school children	850	797	797	835	997
Miscellaneous health services (m)—					
Pathology laboratories	36	33	35	49	59
Home nursing services subsidy	131	157	177	248	317
Total, Health services (n)	20,860	23,340	27,262	33,246	43,032
Homes savings grants	740	760	590	691	1,115
GRAND TOTAL (n)	78,894	85,828	98,577	109,216	133,770

(a) For conditions and rates applying to payment of social service benefits, health benefits, and other forms of assistance, see Chapter V.

(b) A number of endowments are paid every twelve weeks. During two years in every three, there are four such payments each year, and five in the third year.

(c) Less than \$500.

(d) Payable from 6 July 1967.

(e) Introduced 27 September 1968.

(f) Payable from 10 October 1969.

(g) Payable from 15 April 1970.

(h) Payable from 1 January 1968.

(i) Introduced 1 July 1970; benefit payable in respect of each non-pensioner patient, whether insured or uninsured, provided that no hospital fee is charged.

(j) Introduced 1 January 1970; available to persons receiving unemployment, sickness or special benefit, to families with income below a specified minimum, and to migrants during the first two months in Australia.

(k) Introduced 1 January 1969; payable in respect of patients who need and receive intensive nursing home care.

(l) Introduced 1 January 1969.

(m) In addition to the items shown there are some services, the expenditure on which is not allocable among States. In 1971-72 the cost of these services, for Australia as a whole, was \$3.30 million, comprising the supply of blood products \$1.15 million, radio-active isotopes \$0.93 million, hearing aids for school children and pensioners \$0.64 million, poliomyelitis vaccine \$0.25 million, and other vaccines \$0.32 million.

(n) See footnote (m).

COMMONWEALTH AND STATE TAXATION

Commonwealth Taxation

The taxes levied in Western Australia by the Australian Government are listed in the table below which shows the net amounts collected in the five years to 1971-72.

It is important to note that, although the figures shown in this table represent the amounts of taxes actually collected in Western Australia, they do not necessarily indicate the amounts contributed by the people of the State, as moneys may be collected in one State in respect of goods consumed or assessments made in other States. Further, administrative arrangements for the collection of certain taxes are such that a large proportion of the revenue (or, as in the case of wheat tax, the whole of the revenue) is brought to account in a State other than Western Australia.

COMMONWEALTH TAXATION—NET COLLECTIONS IN WESTERN AUSTRALIA (†) (\$'000)

Tax, duty, charge or levy	1967-68	1968-69	1969-70	1970-71	1971-72
Paid to Consolidated Revenue Fund—					
Income tax (a)	193,765	226,532	280,042	317,373	359,836
Customs duties (a)	16,604	19,580	22,865	27,662	28,075
Excise duties	62,349	68,642	76,101	88,341	100,955
Sales tax (a)	28,944	34,779	40,819	43,647	47,305
Pay-roll tax (b)	13,204	15,162	18,180	21,156	6,055
Estate duty	2,551	2,482	4,220	3,642	3,842
Gift duty	602	812	1,008	708	737
Broadcast listeners' and television viewers' licences	2,666	3,127	3,483	3,689	4,642
Other	38	67	136	212	250
Total (a)	320,724	371,185	446,854	506,430	551,697
Other (c)—					
Wool tax	2,445	3,017	2,541	974	1,153
Export charges on primary products	29	62	60	82	44
Stevedoring industry charge	1,609	1,487	1,455	1,390	1,900
Butterfat levy	59	61	58	56	64
Canning-fruit charge	1	(d)	....	(d)	....
Livestock slaughter levy—					
Cattle	93	105	121	116	174
Pigs ....	....	....	....	....	13
Sheep and lambs	81	101	132	128	214
Honey levy	7	8	5	7	10
Tobacco charge ....	....	3	....	....	....
Total	4,323	4,845	4,372	2,753	3,572
GRAND TOTAL (a)	325,047	376,030	451,226	509,183	555,269

(a) The amounts shown have been adjusted by offsetting remissions under special circumstances of income tax, customs duties and sales tax.

(b) Discontinued as Commonwealth tax September 1971; from that date collected by State Government (see page 270).

(c) Transferred to trust funds or relevant authorities and used for purposes of the industry concerned.

(d) Less than \$500.

(†) Details of the purposes and rates applicable to the main forms of Commonwealth taxation are given in the Year Book, Australia; No. 58, 1972.

Income Tax. Income tax is by far the most important source of Commonwealth revenue from taxation and accounted for 66·6 per cent of all Commonwealth taxation collections in 1971-72. The tax is levied on the incomes of individuals, companies, partnerships and trusts, and superannuation funds. When considering the figures shown in the tables on the next page the following definitions are relevant.

Assessable income includes all income (other than *exempt income*) derived directly or indirectly from sources in Australia, and in the case of a taxpayer resident in Australia it includes income from sources outside Australia. (The principal items of *exempt income* are war and service pensions; age and invalid pensions, child endowment, and other payments made in terms of the Social Services Act and the Tuberculosis Act; income from gold-mining and some other mining operations; and income received from a scholarship, bursary or other educational allowance.)

Net income comprises assessable income less deductions for expenses incurred in gaining assessable income.

Taxable income is the amount remaining after deducting from assessable income all allowable deductions, which include special deductions and rebates and, in the case of an individual, concessional deductions. Concessional deductions may be claimed in respect of dependants, housekeepers, education expenses, medical expenses, funeral expenses, life insurance premiums, and payments to superannuation funds and medical and hospital benefits funds.

INCOME TAX ASSESSMENTS—INDIVIDUALS (a): WESTERN AUSTRALIA
INCOME YEAR 1970-71 (ASSESSMENT YEAR 1971-72)

Grade of net income		Number of taxpayers			Net income (b)	Salary and wages in assessable income (c)	Taxable income		Net tax	
		Males	Females	Persons			Total	Average per taxpayer	Total	Average per taxpayer
\$	\$				\$'000	\$'000	\$'000	\$	\$'000	\$
417- 599	....	3,806	8,023	11,829	6,067	5,266	5,865	496	108	9
600- 799	....	4,432	9,528	13,960	9,745	8,350	9,181	658	276	20
800- 999	....	4,791	9,895	14,686	13,228	11,139	12,219	832	501	34
1,000- 1,199	....	5,232	10,061	15,293	16,807	13,971	15,233	996	783	51
1,200- 1,399	....	5,619	10,533	16,152	21,005	17,490	18,869	1,168	1,146	71
1,400- 1,599	....	5,939	10,608	16,547	24,834	19,865	22,190	1,341	1,514	92
1,600- 1,799	....	6,695	10,901	17,596	29,924	23,820	26,680	1,516	2,041	116
1,800- 1,999	....	6,855	11,253	18,108	34,390	27,497	30,674	1,694	2,606	144
2,000- 2,199	....	7,362	11,266	18,628	39,109	31,034	34,716	1,864	3,232	174
2,200- 2,399	....	7,808	9,922	17,730	40,762	32,213	35,980	2,029	3,634	205
2,400- 2,599	....	8,643	8,237	16,880	42,205	33,088	36,808	2,181	3,973	235
2,600- 2,799	....	9,962	7,062	17,024	45,923	36,128	39,591	2,326	4,520	266
2,800- 2,999	....	11,109	5,706	16,815	48,749	38,706	41,679	2,479	4,995	297
3,000- 3,199	....	12,156	4,781	16,937	52,490	42,000	89,906	2,684	5,549	328
3,200- 3,399	....	12,965	3,593	16,558	54,617	44,483				
3,400- 3,599	....	13,373	3,071	16,444	57,550	47,480	146,311	3,031	6,436	391
3,600- 3,799	....	13,707	2,520	16,227	60,046	50,403				
3,800- 3,999	....	13,539	2,057	15,596	60,805	50,965			7,243	464
4,000- 4,499	....	31,342	3,886	35,228	149,433	127,300	229,559	3,610	18,875	536
4,500- 4,999	....	25,746	2,618	28,364	134,446	115,165				
5,000- 5,499	....	19,670	1,923	21,593	113,094	96,189	165,657	4,380	16,535	766
5,500- 5,999	....	14,868	1,357	16,225	93,065	79,146				
6,000- 6,499	....	11,030	1,034	12,064	75,240	62,468	108,568	5,166	12,332	1,022
6,500- 6,999	....	8,204	749	8,953	60,377	49,726				
7,000- 7,499	....	6,230	593	6,823	49,410	40,067	70,613	5,970	8,916	1,307
7,500- 7,999	....	4,557	448	5,005	38,685	30,503				
8,000- 8,999	....	6,206	700	6,906	58,287	43,752	47,110	6,822	11,767	1,704
9,000- 9,999	....	3,601	453	4,054	38,299	26,847	31,127	7,678	8,339	2,057
10,000- 14,999	....	5,800	850	6,650	78,488	46,068	65,367	9,830	20,154	3,031
15,000- 19,999	....	1,384	209	1,593	26,909	11,335	23,460	14,727	8,856	5,559
20,000- 29,999	....	665	107	772	18,267	4,862	16,322	21,142	7,461	9,665
30,000- 49,999	....	172	37	209	7,607	1,460	6,929	33,153	3,738	17,885
50,000- 99,999	....	49	5	54	3,418	509	3,224	59,704	1,954	36,185
100,000 and over	....	6	1	7	1,319	81	1,229	175,571	808	115,429
Total	....	293,523	153,987	447,510	1,604,597	1,269,378	1,335,068	2,983	231,662	518

(a) An individual was liable to pay tax on income derived in 1970-71 only if the taxable income exceeded \$416. (b) Includes income from salary and wages, investments and property, and business and professional activities. (c) Includes items such as commission, bonuses, allowances, directors' fees, and superannuation.

INCOME TAX ASSESSMENTS—COMPANIES (a): WESTERN AUSTRALIA
INCOME YEAR 1970-71 (ASSESSMENT YEAR 1971-72)

Grade of taxable income		Taxable companies			Non-taxable companies	
		Number	Taxable income	Net tax	Number	Taxable income (b)
\$	\$		\$'000	\$'000		\$'000
Nil	....	....	....	....	(c) 5,399	....
1- 1,999	....	1,363	962	354	213	167
2,000- 9,999	....	1,924	10,598	3,762	282	1,406
10,000- 19,999	....	916	12,672	4,713	85	1,207
20,000- 39,999	....	584	16,339	6,299	44	1,229
40,000- 99,999	....	364	22,785	8,563	20	1,128
100,000- 199,999	....	157	21,452	8,106	(d)	1,895
200,000- 399,999	....	74	20,990	8,127	(d)	239
400,000- 999,999	....	60	35,663	13,300	(d)	667
1,000,000- 1,999,999	....	9	12,109	5,637	....	....
2,000,000 and over	....	8	31,041	14,000	....	....
Total	....	5,459	184,610	72,861	6,058	7,938

(a) Includes private, public, co-operative, and non-profit companies. (b) A company, other than a non-profit company, is not liable for income tax if its taxable income is less than \$1 or if it is allowed rebates which equal or exceed the tax otherwise payable; a non-profit company is not taxable if the taxable income is \$416 or less. (c) Includes 4,047 companies showing an aggregate loss of \$31.4 million. (d) Not available for publication.

The Commonwealth Statistician, Canberra publishes an annual bulletin *Commonwealth Taxation Assessments* which contains comprehensive statistical tables and details of rates of tax, allowable deductions and other conditions applying to tax on incomes of individuals and of companies.

State Taxation

The net amounts collected in Western Australia in the form of State Government taxation in each year from 1967-68 to 1971-72 are shown in the table on page 274. Information concerning rates of tax and the relevant legislation is given below.

STAMP DUTIES. The *Stamp Act, 1921-1973* imposes stamp duties and prescribes the rates applying to a great number of transactions relating to a wide range of property, commodities and services (see table on page 273).

ESTATE DUTY (PROBATE AND SUCCESSION DUTIES). The *Death Duty Act, 1973* imposes duties on the estates of deceased persons and specifies the rates of duty. Conditions relating to the imposition, assessment, and collection of duties are contained in the *Death Duty Assessment Act, 1973*. Differential rates of duty and amounts of exemption apply according to distinct categories of beneficiary. The following table shows the amounts of duty payable from 1 January 1974 on estates of persons dying on or after that date, classified according to the final balance of the estate.

ESTATE DUTY—AMOUNTS PAYABLE FROM 1 JANUARY 1974
CLASSIFIED ACCORDING TO VALUE OF ESTATE

Final balance of estate	Where deceased was domiciled in Western Australia at time of death			Where deceased was not domiciled in Western Australia at time of death
	Gross amount payable where estate passes to—			
	Widow, widower, children, etc. (a)	Brothers, sisters, or parents, (b)	Any other person (c)	
\$	\$	\$	\$	\$
200	Nil	Nil	Nil	Nil
1,000	Nil	Nil	Nil	100
1,500	Nil	Nil	Nil	153
3,000	Nil	90	120	312
5,000	Nil	250	300	540
10,000	Nil	750	850	1,180
15,000	Nil	1,350	1,500	1,920
20,000	450	1,950	2,150	2,760
30,000	1,550	3,350	3,650	4,440
50,000	4,150	6,750	7,250	8,400
70,000	7,350	10,750	11,450	13,160
90,000	11,350	15,550	16,450	18,720
110,000	16,150	21,150	22,450	25,080
130,000	21,750	27,750	29,450	32,240
150,000	28,150	35,350	37,450	40,200
170,000	35,750	44,150	46,650	48,960
200,000	49,250	59,150	62,250	63,600
250,000	62,500	75,000	80,000	80,000
500,000	125,000	150,000	160,000	160,000

(a) Widow, widower, children, grandchildren, other issue, or dependent parents of the deceased person. (b) Includes brothers or sisters of the half blood or by step or adoptive relationship, and parents other than dependent parents. (c) Or any body corporate or unincorporate.

LAND TAX. The *Land Tax Assessment Act, 1907-1973* authorises a tax, with certain specified exemptions, on every owner of land, and the rates of tax are prescribed by the *Land Tax Act, 1948-1969*. The following table shows the rates of tax and the amounts of tax payable, in respect of the assessment year 1972-73, on improved land and unimproved land of the values specified.

LAND TAX—RATES OF TAX AND AMOUNTS PAYABLE
ASSESSMENT YEAR 1972-73

Unimproved value—		Improved land		Unimproved land	
Exceeding	Not exceeding	Tax on amount in first column	Tax per dollar on remainder	Tax on amount in first column	Tax per dollar on remainder
\$	\$	\$	cents	\$	cents
Nil	5,000	Nil	0·3	Nil	1·00
5,000	10,000	15	0·4	50	1·25
10,000	15,000	35	0·5	112·50	1·50
15,000	20,000	60	0·6	187·50	1·75
20,000	25,000	90	0·7	275	2·00
25,000	30,000	125	0·8	375	2·25
30,000	35,000	165	0·9	487·50	2·50
35,000	40,000	210	1·0	612·50	2·75
40,000	45,000	260	1·1	750	3·00
45,000	50,000	315	1·2	900	3·25
50,000	60,000	375	1·3	1,062·50	3·50
60,000	70,000	505	1·4	1,412·50	3·75
70,000	80,000	645	1·5	1,787·50	4·00
80,000	90,000	795	1·6	2,187·50	4·25
90,000	100,000	955	1·8	2,612·50	4·50
100,000	110,000	1,135	2·0	3,062·50	4·75
110,000	120,000	1,335	2·2	3,537·50	5·00
120,000	upwards	1,555	2·4	4,037·50	5·25

PAY-ROLL TAX. Pay-roll tax, which was formerly levied by the Commonwealth Government (see page 267), has been collected by the States since September 1971. In Western Australia the enabling legislation comprises the *Pay-roll Tax Assessment Act, 1971-1973* and the *Pay-roll Tax Act, 1971-1973*. The tax is payable by each employer, with certain specified exceptions, on all wages and salaries paid in excess of \$1,733·33 per month (\$20,800 per annum). The rate of tax prescribed by the *Pay-roll Tax Act, 1971-1973* is 3½ per cent of the taxable wages paid or payable during or before the month of August 1973, and 4½ per cent from September 1973.

BOOKMAKERS BETTING TAX. The *Bookmakers Betting Tax Act, 1954-1970* provides for a tax on money paid or promised as the consideration for bets made by or on behalf of bookmakers. Rates of tax are prescribed as a proportion of the turnover of a racing year (1 August to 31 July). In respect of turnover of the year ended 31 July 1973 the rates applying to on-course transactions were 2 per cent of amounts up to \$100,000 and 2½ per cent of the remainder. For off-course transactions the rate was 2½ per cent of amounts up to \$50,000, the rate payable on each additional \$50,000 of turnover increasing by ½ per cent up to \$300,000; on turnover exceeding \$300,000 the rate was 3½ per cent.

TOTALISATOR AGENCY BOARD BETTING TAX. The *Totalisator Agency Board Betting Tax Act, 1960-1973* imposes a tax on all moneys paid to the Board in respect of bets made through or with the Board. The rate of tax payable at 30 June 1973 was 6 per cent.

TOTALISATOR DUTY. The *Totalisator Duty Act, 1905-1973* authorises the payment of duty on the takings of totalisators operated by horse-racing clubs and prescribes the rates to be paid. Differential rates apply to totalisators operated within a radius of twenty-five miles from the General Post Office, Perth and those situated outside this area. In 1972-73, the principal rates of duty payable in respect of totalisators in the former area were 9 per cent of the gross takings from win and place transactions and 5 per cent of the gross takings from wagering transactions known as 'jack pots', 'quinellas' and 'doubles'; for totalisators outside that area, the rate was 5 per cent for all transactions.

TOTALISATOR LICENCES. The *Totalisator Regulation Act, 1911-1973* provides for the licensing of totalisators operated by horse-racing clubs. Licence fees are prescribed by regulation and are payable annually in respect of the calendar year. For the year 1973 the fee payable was \$2 for each \$2,000 (or part of \$2,000) passing through the totalisator.

BETTING INVESTMENT TAX. The *Betting Investment Tax Act, 1959-1966* imposed a tax on each bet made by a bookmaker in registered premises and on each bet made through

or with the Totalisator Agency Board. The amount of tax payable at 31 December 1970 was three cents on each such bet. (The Betting Investment Tax Act was repealed, with effect from 1 January 1971, by the *Betting Investment Tax Act Repeal Act, 1970*.)

LIQUOR LICENCES. Licences and permits authorising the holder to sell or supply fermented and spirituous liquors are granted under the provisions of the *Liquor Act, 1970-1973*. The Liquor Act, which repeals the *Licensing Act, 1911-1969*, became operative with effect from 1 July 1970. It prescribes the fees payable in respect of liquor licences and permits. The several types of licence for which the Act provides are shown in the table *Liquor Licences in Force* on page 256. Annual licence fees, except in the case of a vigneron's licence, are assessed as a proportion of the gross amount paid for liquor purchased for licensed premises or, in the case of a wholesale spirit merchant's licence and a brewer's licence, the gross amount received for liquor sold. The proportion prescribed by the Act is $7\frac{1}{2}$ per cent for a tavern licence or a store licence and $5\frac{1}{2}$ per cent for other licences. An additional annual fee of \$60 is payable in respect of a wholesale spirit merchant's licence and a brewer's licence. The annual fee payable for a vigneron's licence is \$20.

MOTOR VEHICLE REGISTRATION FEES. The *Traffic Act, 1919-1973* provides for the registration of vehicles and prescribes the licence fees to be paid in respect of the several classes of vehicles required to be registered. Fees are based on the tare weight of the vehicle (except for motor cycles, which are subject to a standard fee). At 31 December 1973 the annual licence fee for a motor car or station wagon, for example, was \$2 where the tare weight did not exceed fifty-one kg, the fee increasing progressively to \$39 where the tare weight was 1,581 kg, and thereafter by \$1 for each additional fifty-one kg or part thereof. The annual fee for a motor cycle was \$5. The fee payable on transfer of a licence for any vehicle was \$2.

MOTOR VEHICLE DRIVERS' LICENCES. The *Traffic Act, 1919-1973* authorises the issue of drivers' licences to persons of a minimum age of seventeen years, specifies other conditions to be satisfied, and prescribes the fees to be paid on application for, and issue or renewal of, a licence. At 31 December 1973 the fee payable on application was \$4, and on issue or annual renewal, \$3 (or \$1 in the case of a licence to drive a passenger vehicle).

MOTOR VEHICLE THIRD PARTY INSURANCE SURCHARGE. The *Motor Vehicle (Third Party Insurance Surcharge) Act, 1962-1973* imposes a surcharge on premiums paid in respect of policies of insurance with The Motor Vehicle Insurance Trust. At 31 December 1973 the rate of the surcharge was \$5 per annum.

TAXI CONTROL BOARD LICENCES. The *Taxi-cars (Co-ordination and Control) Act, 1963-1973*, under which the Taxi Control Board is constituted, requires that taxi-cars operating in the Metropolitan Traffic Area and other areas as declared shall be licensed, and prescribes maximum fees payable. At 31 December 1973 these fees were \$30 on the issue or annual renewal of a licence, and \$4 on the transfer of a licence.

TRANSPORT COMMISSION LICENCES. The *Transport Commission Act, 1966-1972* provides for the licensing of public vehicles in the categories of omnibus, commercial goods vehicle, trailer or semi-trailer, and aircraft, as well as ships engaged in the coasting trade. Licence fees are as determined from time to time by the Commissioner of Transport, subject to certain maximum charges prescribed by the Act. In the case of an omnibus for example, the fee may not exceed 6 per cent of the gross earnings, or \$10 per annum for each unit of the maximum number of passengers which it is licensed to carry, the basis of assessment being that considered by the Commissioner to be the more appropriate.

ROAD MAINTENANCE CONTRIBUTION. The *Road Maintenance (Contribution) Act, 1965-1972* imposes a charge on the operations, subject to specified exemptions, of any commercial goods vehicle having a load capacity of more than 8·13 tonnes. At 31 December 1973 the rate of the charge was 0·17 cents per tonne-kilometre calculated on the basis of the tare weight plus two-fifths of the load capacity. The Act provides that, in specified circumstances, the charge may be levied on vehicles having a load capacity of 8·13 tonnes or less.

METROPOLITAN REGION IMPROVEMENT TAX. The *Metropolitan Region Improvement Tax Act, 1959-1966* authorises a tax, with certain specified exemptions, on every owner of land within the Metropolitan Planning Region. (The Region is coterminous with the Perth Statistical Division; see maps preceding *Index*.) The rate of tax payable for the assessment year ended 30 June 1973 was one-quarter of a cent for every dollar of the unimproved value of all land chargeable with the tax.

VERMIN RATE. The *Vermin Act, 1918-1973*, in addition to prescribing levies imposed for the purposes of local Vermin Boards, authorises a special vermin rate, the revenue from which is used by the Agriculture Protection Board for the control or eradication of animals, birds and insects declared to be vermin within the meaning of the Act. Subject to certain exemptions, every holding of an area of more than five acres is rateable. The rate, as prescribed by the Act, may not exceed two and one-half cents in the dollar of the unimproved capital value in the case of land held under pastoral lease, or five-twelfths of a cent in the dollar in the case of other holdings. For the assessment year 1969-70, the rate was two cents in the dollar on pastoral leases and 0.14 of a cent in the dollar on other holdings. (The *Vermin Act Amendment Act, 1970* suspends imposition of the rate with effect from 30 June 1970.)

NOXIOUS WEEDS RATE. The *Noxious Weeds Act, 1950-1973* contains provisions relating to noxious weeds which are generally similar to those of the Vermin Act in relation to declared vermin. The maximum rate as prescribed by the Act is, in the case of a pastoral lease, one and one-quarter cents and, in the case of other land, five twenty-fourths of a cent in the dollar of the unimproved value of the holding. In 1969-70 the rate was not levied in respect of pastoral land. The rate payable on other land was 0.07 of a cent in the dollar. (The noxious weeds rate was abolished, with effect from 1 July 1970, by the *Noxious Weeds Act Amendment Act, 1970*.)

FRUIT FLY ERADICATION. The *Plant Diseases Act, 1914-1973* provides for the compulsory registration of orchards and the payment of registration fees to be credited to a fund to finance the control, prevention, and eradication of the fruit fly pest. In accordance with regulations gazetted on 30 June 1972 a fee of twenty cents is payable on registration of an orchard having an area of less than one acre. This fee is levied once only. An annual fee at the rate of fifty cents per acre or part of an acre is payable in respect of an orchard of one acre or more, except that the maximum annual fee is \$6 in the case of a vineyard the fruit of which is used only for the manufacture of wine.

STATE GOVERNMENT FINANCE

Moneys collected and expended by the State Government are dealt with through accounts based on funds of three types, the Consolidated Revenue Fund, the General Loan Fund and Trust Funds. The transactions of these Funds are summarised in the Public Accounts prepared each year by the Treasurer and in the Financial Statement presented to the Parliament by the Treasurer in introducing the annual budget.

Public finance statistics published by the States are limited generally to dissections of the revenue, loan and debt transactions of State Governments and local government authorities. However, work has been proceeding in recent years on the development of a new system of public authority finance statistics with the aim of providing data on the financial transactions of all public authorities. This information is required by government departments and many other users for economic analysis and social inquiries, and for a wide variety of other purposes.

Although comprehensive statistics compiled on the new basis have not yet been published for the several States, a limited analysis is available in the printed bulletin *Public Authority Finance, 1969-70* issued March 1972 by the Commonwealth Statistician, Canberra. More recent figures are contained in the mimeographed release *Public Authority Finance : State and Local Authorities, 1972-73* published May 1974 by the Commonwealth Statistician.

Consolidated Revenue Fund

All State revenues, apart from those which are credited to trust or special accounts, are paid into the Consolidated Revenue Fund. Disbursements from the Fund are authorised by the Parliament, each year under an Appropriation Act, or under Special Acts subject to periodical review. Among the permanent appropriations by Special Acts are such items as the salaries of the Governor of Western Australia, the Judges of the Supreme Court and Members of Parliament, interest charges on the public debt, contributions to the Public Debt Sinking Fund, payments to the State Superannuation Fund and the annual subsidy to the University of Western Australia.

CONSOLIDATED REVENUE FUND—SOURCES OF REVENUE
(\$'000)

Nature of revenue	1967-68	1968-69	1969-70	1970-71	1971-72
Collected by the State—					
Taxation—					
Stamp duties on—					
Cheques, orders, procurations, etc.	1,808	1,977	2,385	2,425	2,835
Conveyances and transfers	6,088	8,777	8,589	6,681	7,009
Credit facilities (including hire purchase agreements)....	1,072	888	1,712	3,050	3,283
Insurance policies	2,070	2,383	2,862	3,324	3,706
Mortgages	738	1,097	1,191	1,082	1,220
Motor vehicle licences	1,555	1,670	1,978	2,103	2,247
Receipts	4,281	5,213	5,318	3,148	102
Share transfers	378	519	1,453	1,021	541
Other	265	353	377	323	351
Other taxation (a)	16,662	18,726	25,000	25,278	57,195
Total	34,916	41,602	50,865	48,434	78,490
Territorial revenues—					
Land	1,435	1,565	1,489	1,448	1,653
Mining—					
Royalties—					
Iron ore	4,945	9,028	13,085	19,027	22,449
Petroleum	1,043	1,392	1,922	2,010	1,543
Nickel	20	295	308	769	549
Other	229	285	380	541	706
Lease and other rentals	755	1,459	3,286	5,140	4,774
Timber royalties	3,417	3,277	3,164	3,251	3,317
Total	11,845	17,301	23,633	32,187	34,992
Public utilities—					
Railways	51,183	49,163	57,200	61,820	66,180
Water supplies, sewerage and drainage	4,500	4,538	5,602	6,476	7,209
Other	543	706	120	54	57
Total	56,226	54,407	62,921	68,350	73,446
Departmental—					
Agriculture	653	815	982	1,167	1,517
Companies Registration Office	508	704	1,031	1,226	1,454
Education	890	986	1,167	1,382	1,463
Forests	1,416	1,378	1,444	1,459	1,716
Harbour and Light	3,240	3,300	2,297	2,821	3,022
Lands and Surveys	526	684	648	740	793
Land Titles	449	870	866	785	860
Police	1,569	1,954	1,940	1,878	3,141
Printing	1,168	1,426	1,655	1,640	3,176
Public Health	809	860	957	1,222	1,259
Public Works	1,220	1,300	1,541	1,632	1,975
Treasury (including interest and sinking funds)	17,591	15,677	18,679	24,781	27,640
Other	3,096	3,081	3,698	4,850	6,115
Total	33,135	33,035	36,905	45,583	54,131
Other	1,999	2,115	2,538	2,301	2,808
Total, Collected by the State	138,121	148,460	176,863	196,855	243,867
Received from the Commonwealth (b)—					
Interest on State debts	947	947	947	947	947
Special grants	15,518	582	.....	.....	.....
Financial assistance grants	96,152	(c)123,796	(c)138,835	(c)163,313	(c)170,960
Special financial assistance grants ....	.....	1,296	1,545	5,030	6,014
Debt charges assistance grants ....	.....	.....	.....	1,106	2,211
Total, Received from the Commonwealth	112,617	126,621	141,326	170,396	180,132
GRAND TOTAL	250,738	275,081	318,189	367,252	423,999

(a) For further details, see table *State Government Taxation—Net Amounts Collected* on page 274. (b) See table on page 265. (c) Includes payments in place of a Special Grant: 1968-69, \$15.5 million; 1969-70, \$15.5 million; 1970-71, \$12.5 million; 1971-72, \$9.5 million (see letterpress *The Grants Commission* on page 264).

The principal sources of revenue, as shown in the preceding table, are the grants and other financial assistance received from the Australian Government; the income of public utilities; taxation; departmental revenues from reimbursements, fees and services; and territorial revenues.

Payments made to the State of Western Australia by the Australian Government during each of the years from 1967-68 to 1971-72 appear in the table on page 265. Not all of these moneys are paid to the State Consolidated Revenue Fund, as some of them are provided for specific purposes and are therefore paid to trust or other accounts.

Territorial revenues are those derived from royalties, sales of crown land, and the issue of leases, licences and permits in connection with land, mining and timber. Reference to the several types of tenure in these categories will be found in Chapter VII, Part 1—*Land Tenure and Settlement*.

There has been a considerable increase in recent years in revenue from mining royalties, due principally to greatly accelerated exploitation of iron-ore and nickel deposits and the commencement of oil drilling on a commercial scale. Reference to these developments will be found in the final section, *Mining*, of Chapter VIII, Part 1. Collections of royalties on all minerals amounted to \$6.24 million in 1967-68, \$11.0 million in 1968-69, \$15.7 million in 1969-70, \$22.3 million in 1970-71, and \$25.2 million in 1971-72. Total revenue from this source in 1972-73 was \$27.7 million, comprising \$24.7 million from iron ore, \$1.31 million from crude petroleum, \$0.63 million from nickel, \$0.41 million from bauxite, \$0.30 million from natural gas, \$0.16 million from salt, and \$0.19 million from all other minerals.

STATE GOVERNMENT TAXATION—NET AMOUNTS COLLECTED (a)
(*\$'000*)

Nature of tax	1967-68	1968-69	1969-70	1970-71	1971-72
Paid to Consolidated Revenue Fund—					
Stamp duties not elsewhere included	16,669	21,173	23,832	20,717	18,776
Probate and succession duties	5,162	6,297	9,399	8,256	7,562
Land tax	4,702	4,746	6,737	7,201	9,439
Pay-roll tax	....	....	....	....	(b) 23,770
Racing—					
Stamp duty	61	66	78	77	76
Bookmakers betting tax and licences	162	193	230	333	493
Totalsator Agency Board betting tax	2,081	2,386	2,718	3,062	4,006
Totalsator duty and licences	550	646	794	884	1,034
Betting investment tax	574	642	733	(c) 436	(c) 436
Liquor	2,566	2,848	3,262	3,753	4,434
Motor vehicle—					
Stamp duty on registration and transfer of motor vehicles	1,555	1,670	1,978	2,102	2,246
Vehicle registration fees and taxes	81	277	767	667	1,530
Drivers' and riders' licences and fees	756	838	881	915	939
Third party insurance surcharge	700	755	816	873	1,587
Licences not elsewhere included	330	355	383	431	666
Total	*35,949	*42,891	*52,607	49,706	76,559
Paid to trust funds—					
Stamp duties not elsewhere included	84	94	102	124	151
Motor vehicles (d)—					
Vehicle registration fees and taxes	6,196	6,710	(e)*12,211	(e)*13,122	(e) 13,726
Drivers' and riders' licences and fees	588	641	681	715	743
Road transport (f)	689	863	918	1,405	1,419
Road maintenance contribution	2,873	3,210	3,624	3,990	3,822
Metropolitan region improvement...	1,101	1,656	1,325	1,264	1,413
Vermis	534	593	770	(g) 111	....
Noxious weeds	205	235	352	(h) 54	....
Licences and taxes not elsewhere included (i)	250	313	402	382	429
Total	*12,520	*14,316	*20,385	*21,168	21,705
GRAND TOTAL	48,469	57,207	*72,991	*70,874	98,264

(a) For rates and conditions applying to the several taxes, see pages 269-72. (b) Formerly levied by the Commonwealth Government. On 1 October 1971 the State Government commenced collection of pay-roll tax on wages paid or payable by employers after 31 August 1971. (c) Tax abolished with effect from 1 January 1971. (d) See letterpress *Finance for Roads*, Chapter IX, Part 3. (e) From 1 July 1969, includes amounts collected by local government authorities and paid to the Main Roads Trust Account, as required by the *Traffic Act Amendment Act (No. 2)*, 1969. For amounts collected and retained by local government authorities, see table on page 281. (f) Includes revenue from Taxi Control Board Licences and Transport Commission Licences. (g) Vermis rate suspended with effect from 30 June 1970; amount shown represents arrears. (h) Noxious weeds rate abolished with effect from 1 July 1970; amount shown represents arrears. (i) Includes fees collected under the Plant Diseases Act; see letterpress *Fruit Fly Eradication* on page 272. * Revised.

The amounts shown in the preceding table are grouped according to the nature of the tax rather than the method of collection. Thus stamp duties on betting tickets and revenue from bookmakers' licences and totalisator licences are included under the heading 'Racing' and not under 'Stamp duties' or 'Licences'. It will be seen that, although the figures represent net collections, the aggregates of the amounts shown as payments to the Consolidated Revenue Fund exceed those appearing as taxation revenue (gross) in the table on page 273. This is accounted for by the fact that some types of licences and other fees are not included under the heading of taxation in the Public Accounts, earnings from them being credited to departmental revenue. Items dealt with in this way include drivers' and riders' licences and fees as shown in the first part of the table, as well as licences relating to firearms; factories and shops; fishing, pearling and game; and marine collectors. Other moneys paid to departmental revenue are fees collected under the provisions of the Companies Act and the Business Names Act.

CONSOLIDATED REVENUE FUND
REVENUE AND EXPENDITURE CLASSIFIED ACCORDING TO ACTIVITY
 (\$'000)

Activity	1970-71			1971-72		
	Revenue	Expenditure		Revenue	Expenditure	
		Gross	Net		Gross	Net
Legislation	2	1,949	1,947	2	2,113	2,112
General administration and services, not elsewhere included	*224,277	12,554	*Cr.211,722	266,268	19,019	Cr.247,249
Law, order and public safety	4,455	20,069	15,614	6,192	26,208	20,017
Education	1,382	86,333	84,951	1,570	100,677	99,106
Cultural and recreational facilities	6	3,639	3,633	7	3,778	3,771
Public health	2,349	53,609	51,260	2,667	61,099	58,432
Welfare	511	9,168	8,657	494	11,284	10,789
War and defence .....	.....	89	89	.....	130	130
Immigration	115	560	445	114	551	436
Regulation of trade and industry and industrial safety	689	1,408	719	792	1,754	962
Development and conservation of natural resources and assistance to industry	44,427	47,363	2,936	49,236	48,351	Cr. 885
Transport and communication	64,846	74,472	9,626	69,509	80,501	10,993
Power, fuel and light .....	.....	25	25	.....	5	5
Housing .....	.....	116	116	5	142	137
Banking and insurance	*323	116	* Cr. 207	807	104	Cr. 703
Public debt charges	23,196	54,652	31,456	25,623	62,558	36,936
Miscellaneous	674	5,498	4,823	712	6,614	5,902
Total	367,252	371,620	(a) 4,368	423,999	424,890	(b) 891

(a) Published Budget deficit, \$4,368,120.

(b) Published Budget deficit, \$890,971.

* Revised.

This table is designed to show (in respect of the Consolidated Revenue Fund only) the gross and net cost of each activity of Government irrespective of the Department or Departments administering these activities. In cases where an activity is such that it involves more than one function, each of its components has been included in that activity which is considered to be the most appropriate. For example, in classifying expenditure attributable to child welfare, the custody and care of delinquent children is included under 'Law, order and public safety' and the education of children in institutions under 'Education', only the balance being assigned to the item 'Welfare'.

The amount shown as revenue under the heading 'General administration and services, not elsewhere included' is more than three-fifths of the total. The item includes receipts from the Australian Government and taxation collected by the State amounting in all to \$219.3 million in 1970-71 and \$259.2 million in 1971-72.

By a provision of the *State Government Insurance Office Act, 1938-1965* the State Government Insurance Office is required to pay each year to the Treasury the equivalent of the amount of State taxes on profits or income that any insurance company, other than a life insurance company, would be liable to pay. The amounts shown as revenue under 'Banking and insurance' include \$203,181 in 1970-71 and \$539,833 in 1971-72 in relation

to such payments. The expenditure under the heading of 'Banking and insurance' comprises mainly reimbursements from the Treasury to The Rural and Industries Bank of Western Australia of administration expenses incurred in the conduct of its Government Agency Department. These recoups were \$116,221 in 1970-71 and \$103,984 in 1971-72.

**CONSOLIDATED REVENUE FUND
EXPENDITURE ACCORDING TO NATURE OF SERVICE (\$'000)**

Nature of expenditure	1967-68	1968-69	1969-70	1970-71	1971-72
Expenditure on public utilities—					
Railways	52,173	51,377	56,956	62,937	68,173
Water supplies, sewerage and drainage	7,583	11,512	13,649	16,202	13,674
State batteries	447	512	498	578	563
Other	525	616	64	....	....
Total	60,728	64,016	71,166	79,717	82,410
Departmental expenditure—					
Agriculture	4,359	5,013	*5,850	*6,855	7,880
Audit	289	306	342	401	477
Bush Fires Board	128	149	203	208	197
Chief Secretary	457	459	514	470	515
Child Welfare	2,272	2,649	3,476	4,818	6,660
Computer Centre	143	73	80	211	241
Corrections	1,677	2,012	2,475	3,353	4,390
Crown Law	2,831	3,232	3,864	4,528	5,481
Education	41,224	46,441	55,839	66,341	82,472
Electoral	282	111	142	403	195
Factories	100	104	123	155	180
Fisheries and Fauna	513	595	747	929	1,075
Forests (a)	1,577	1,600	1,575	1,745	1,989
Government Stores	552	605	697	731	719
Harbour and Light	1,896	2,041	1,910	2,209	2,009
Industrial Commission	139	160	185	214	271
Industrial Development and Decentralisation	970	874	1,009	1,240	1,034
Inspection of Machinery .....	....	....	194	227	252
Labour	108	125	139	205	258
Lands and Surveys	3,535	3,857	4,309	4,237	4,834
Library Board, Museum, and Art Gallery	1,008	1,130	1,421	1,803	2,045
Local Government	180	181	201	254	285
London Agency	214	199	229	246	259
Mental Health Services	4,800	5,304	6,393	7,794	9,954
Metropolitan (Perth) Passenger Transport Trust—Recoup of loss	552	925	923	1,791	3,189
Mines	2,495	2,372	2,909	3,696	4,562
Native Welfare	2,670	3,056	3,349	3,328	3,145
Observatory	55	58	76	88	126
Police	6,879	7,936	9,396	10,811	14,314
Premier's Department	298	365	333	367	377
Printing	950	1,188	1,337	1,479	3,449
Public Health	24,494	28,310	34,950	44,781	49,908
Public Service Board	200	223	278	342	428
Public Works	8,092	9,404	10,805	13,308	13,662
Registry and Friendly Societies	133	127	152	180	210
Superannuation Board	66	66	93	111	142
Taxation	600	666	816	2,389	2,625
Tourist Development Authority	345	606	649	763	924
Town Planning	296	298	388	494	583
Treasury	488	547	640	446	548
University of Western Australia—Additional payments (a)	3,460	3,509	4,441	*4,931	5,459
War Service Land Settlement Scheme—Contribution to capital losses	1,400	1,400	1,297	....	....
Western Australian Coastal Shipping Commission—Recoup of loss	2,629	3,251	3,651	4,796	4,398
Western Australian Institute of Technology	1,382	1,830	2,933	3,861	4,760
Other	9,143	11,520	*13,508	*18,409	21,115
Total	135,881	154,877	184,841	225,946	267,594
Expenditure under special Acts—					
Agriculture Protection Board Act	534	593	770	243	....
Forests Act (b)	2,948	2,775	2,744	2,696	2,795
Loan Acts (public debt)—					
Interest	36,032	38,709	42,539	44,611	51,664
Sinking fund contributions	7,832	8,373	8,887	9,566	10,365
Mine Workers' Relief Act	49	52	57	68	73
Parliamentary salaries and allowances	716	844	872	863	1,107
State Transport Co-ordination Act	50	77	115	142	119
Superannuation Acts—Government employees	3,256	3,785	4,557	5,125	6,193
University of Western Australia Act (b)	500	500	500	500	500
Other	999	1,109	1,341	1,592	1,435
Total	52,916	56,817	62,383	65,406	74,250
Other expenditure....	385	427	510	553	635
GRAND TOTAL	249,909	276,137	318,901	371,620	424,890

(a) For expenditure under Special Acts, see below.
* Revised.

(b) For additional payments, see *Departmental expenditure* above.

The particulars shown in the preceding table and in the table on page 273 are an abridged form of the presentation given in the Public Accounts. It is, of course, possible to present the figures of income and expenditure of the Consolidated Revenue Fund on other bases for particular purposes. One such grouping is a dissection according to activity as in the table on page 275. The classification used has been summarised for the purposes of this table from a more detailed statement appearing in *Statistics of Western Australia—Finance*.

General Loan Fund and Public Debt

General Loan Fund. The first Loan Act in Western Australia was assented to in 1872 and gave authority for the raising of a loan for public works, mainly in connection with harbours and rivers, for the purchase of the Perth-Fremantle telegraph line and for railway surveys in the Champion Bay district. A General Loan Fund was established by the Loans Consolidation Act of 1896 which provided for the merging in the Fund of all loan balances unexpended at 30 June 1896, and since that time the proceeds of each new loan have been paid to the credit of the General Loan Fund.

Details of gross expenditure from the General Loan Fund for particular purposes of government, during the five-year period ended 30 June 1972, are given in the following table.

Where an activity is such that it involves more than one function, each of its components has been included in that function which is considered to be the most appropriate. For example, in classifying expenditure attributable to the development of agriculture, the expenditure on Muresk Agricultural College is included under *Education*, only the more general items being assigned to 'agriculture', which is included in *Development and conservation of natural resources and assistance to industry*.

GENERAL LOAN FUND
GROSS EXPENDITURE CLASSIFIED ACCORDING TO PURPOSE
(\$'000)

Purpose	1967-68	1968-69	1969-70	1970-71	1971-72
Legislation .....	.....	.....	60	342	118
Law, order and public safety	1,483	2,290	2,932	2,320	1,002
Education	9,791	10,632	13,796	14,032	14,191
Cultural and recreational facilities	(a)	8	273	1,088	714
Public health	6,606	7,326	8,808	8,240	8,081
Welfare	463	69	95	19	758
War and defence .....	.....	.....	.....	27	85
Immigration	382	439	60	75	27
Development and conservation of natural resources and assistance to industry	18,114	18,046	21,328	25,823	24,384
Transport and communication	15,307	16,967	14,223	13,145	11,913
Power, fuel and light	4,543	5,685	4,567	28	3,666
Housing	3,049	2,741	3,601	5,786	24,275
Miscellaneous	853	300	427	1,475	3,116
Total	60,593	64,503	70,170	72,400	92,330

(a) Less than \$500.

Expenditure on *Education* during 1971-72 amounted to \$14.2 million. Of this total, \$5.70 million was spent on primary education, \$4.37 million on secondary education, \$2.51 million on tertiary education and \$1.50 million on teacher training.

Expenditure on *Public health* (\$8.08 million) was mainly for the provision of new hospitals and extensions to existing hospitals.

The principal items of expenditure included under the heading *Development and conservation of natural resources and assistance to industry* related to water supply, sewerage and town drainage (\$17.5 million), secondary industries (\$3.89 million) and forestry (\$1.10 million). An account of progress in the field of water conservation and supply is given in Chapter VII, Part 2.

The item *Transport and communication* (\$11.9 million) included \$9.32 million spent on railways, \$2.10 million on harbours, and \$0.50 million advanced to the Metropolitan

(Perth) Passenger Transport Trust for the purchase of new omnibuses. Reference is made to the operations of the Trust in Chapter IX, Part 3.

Expenditure on *Power, fuel and light* consisted mainly of advances to The State Electricity Commission, the activities of which are described in Chapter VIII, Part 2.

Expenditure attributed to *Housing* was principally the provision of additional capital to The State Housing Commission for the erection of houses, land acquisition and development, and assistance to home builders. This expenditure, which relates only to the General Loan Fund, does not, of course, include moneys applied to the Commission's purposes from Commonwealth loans under the Commonwealth-State Housing Agreement. Reference to the Agreement and to the work of The State Housing Commission will be found in Chapter V, Part 4.

The following table shows the amounts of loan raisings and redemptions by or on behalf of the State Government during the five-year period ended 30 June 1972.

LOAN RAISINGS AND REDEMPTIONS
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Raisings—					
By Australian Government—					
Loans subscribed in Australia	53,404	54,967	60,517	48,685	63,447
Total, Raisings	53,404	54,967	60,517	48,685	63,447
Redemptions—					
By National Debt Commission—					
Australian securities	7,403	4,480	6,749	8,413	9,256
London securities	1,139	2,659	6,891	2,439	1,663
New York securities	425	411	380	441	620
Canadian securities	33	8	26	24	26
Netherlands securities	36	36	36	36	36
Total, Redemptions	9,036	7,594	14,082	11,352	11,601
Excess of Raisings over Redemptions	44,368	47,374	46,435	37,333	51,847

Public Debt. Western Australia's gross public debt at 30 June 1972, was \$976 million, compared with \$749 million at 30 June 1967, representing an increase of \$227 million during the five years. Total raisings in the financial years 1967-68 to 1971-72 amounted to \$281 million and the value of securities repurchased and redeemed in Australia, London, New York, Canada and the Netherlands by the National Debt Commission was \$53.7 million.

The first table on page 279 presents a summary of public debt transactions in each year for the period between 30 June 1967 and 30 June 1972.

Reference is made on page 263 to the Sinking Funds established by the Financial Agreement of 1927 designed to redeem the public debts of the States. Transactions of the National Debt Sinking Fund in respect of the public debt of Western Australia during the five-year period ended 30 June 1972 are shown in the second table on page 279.

In the following table interest and Sinking Fund payments from Consolidated Revenue Fund in relation to public debt are shown for the years 1967-68 to 1971-72.

PUBLIC DEBT—INTEREST AND
SINKING FUND PAYMENTS (a)
(\$'000)

Year	Interest (b)	Sinking Fund
1967-68	36,032	7,832
1968-69	38,709	8,373
1969-70	42,539	8,887
1970-71	44,611	9,566
1971-72	51,664	10,365

(a) From Consolidated Revenue Fund. (b) Includes exchange on overseas payments.

NET LOAN EXPENDITURE AND PUBLIC DEBT
(\$'000)

Particulars	At 30 June—					
	1967	1968	1969	1970	1971	1972
Debits—						
Aggregate net loan expenditure	884,272	937,690	992,657	1,053,232	1,117,037	1,203,973
Inscribed stock issued under Agricultural Bank Act	3,132	3,132	3,132	3,132	3,132	3,132
The Rural and Industries Bank of Western Australia debenture stock (a)	2,134	2,134	2,134	2,134	2,134	2,134
Unexpended balance of General Loan Fund	18	4	3	....	3,507	488
Total, Debits	889,556	942,960	997,927	1,058,498	1,125,810	1,209,727
Credits—						
Aggregate redemptions	140,954	149,990	157,584	171,666	183,018	194,619
Commonwealth Capital Grants (b) ....	....	....	....	....	18,680	39,150
Bank overdraft ....	....	....	....	54	....	....
Total, Credits	140,954	149,990	157,584	171,720	201,698	233,769
Balance, Gross public debt	748,601	792,969	840,343	886,778	924,111	975,958
Amount of public debt maturing in—						
Australia	677,807	723,808	774,295	835,541	875,814	935,403
London	63,737	62,599	59,940	46,070	43,631	36,571
New York	5,582	5,156	4,746	3,867	3,425	2,805
Canada	551	517	510	484	460	434
Netherlands	539	503	467	432	396	360
Switzerland	385	385	385	385	385	385
Total, Gross public debt	748,601	792,969	840,343	886,778	924,111	975,958
Sinking Fund available for further debt redemption (c)	216	408	3,015	182	582	1,216
Net public debt	748,386	792,562	837,329	886,597	923,530	974,742

(a) Representing stock issued in connection with the acquisition by the Government of the assets of The Midland Railway Company of Western Australia Limited. (b) As provided by the *States Grants (Capital Assistance) Act 1970*. (c) Representing balance of Sinking Fund held by National Debt Commission.

SINKING FUND TRANSACTIONS
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Balance at beginning of year	216	408	3,015	182	582
Receipts—					
Contributions by State	7,848	8,379	8,893	9,634	10,308
Contributions by Commonwealth	1,986	2,105	2,258	2,384	2,557
Interest	17	(a)	97	23	25
Total, Receipts	9,851	10,483	11,249	12,041	12,890
Expenditure—					
Redemptions and repurchases (b) in—					
Australia	7,403	4,480	6,749	8,413	9,256
London	1,283	2,510	6,512	2,248	1,672
New York	860	818	724	882	1,224
Canada	60	14	42	45	47
Netherlands	54	54	54	54	57
Total, Expenditure	9,659	7,876	14,082	11,642	12,256
Balance at end of year	408	3,015	182	582	1,216

(a) Less than \$500.

(b) At net cost including exchange.

Trust Funds

Trust funds are divided into three groups, governmental, private, and those which deal with moneys advanced by the Australian Government for specific purposes. A detailed list of trust fund transactions is published quarterly in the *Statement of the Receipts and Disbursements of Western Australia*. The following table contains a summary of the more important items selected from this list.

SUMMARY OF TRUST FUNDS—RECEIPTS AND EXPENDITURE
(\$'000)

Title of account	1970-71		1971-72		Balance of fund at 30 June 1972
	Receipts	Expenditure	Receipts	Expenditure	
Governmental trust funds—					
Agriculture Protection Board	633	822	1,674	1,602	184
Country High School Hostels Authority.....	783	439	744	982	105
Crown Law Advance	12,527	12,630	10,475	10,510	133
Forests Improvement and Reforestation	5,369	4,847	6,335	6,198	916
Hospital Buildings and Equipment	4,761	5,872	2,740	2,131	805
Hospital Fund Contributions	47,534	47,534	48,179	48,179	....
Housing—					
Government Employees' Housing Authority	4,103	4,020	3,645	3,770	2
State Housing Commission	37,584	39,386	61,228	52,403	15,343
Industrial Lands Development	1,613	1,031	2,111	2,660	34
Insurance—					
Government Fire and Marine Insurance	2,191	2,063	2,774	2,870	81
Government Workers' Compensation	1,310	1,162	1,495	1,363	499
Railway Accident and Fire Insurance	459	701	719	489	495
State Insurance	14,565	14,647	16,378	16,216	233
Karratha Development—Reticulation Services	1,010	874	682	858	111
Library Board of Western Australia	1,129	1,110	1,807	1,816	28
Main Roads Department Payroll Surcharge	1,251	1,205	1,387	1,395	347
Metropolitan Region Improvement	3,903	3,643	4,017	3,870	191
Milk Board	349	352	371	379	11
National Parks Board	430	429	447	446	2
Native Welfare Administration	3,574	3,538	3,308	3,332	40
Noxious Weeds	496	744	567	731	113
Plant Hire	2,235	2,472	2,526	2,472	544
Public Debt Sinking Fund	400	....	635	....	1,216
Public Works Department Payroll Surcharge	1,763	1,498	1,999	1,993	1,152
Railways Rolling Stock Replacement	1,036	726	1,108	1,006	456
Roads—					
Main Roads	91,990	90,915	102,150	103,153	5,575
Main Roads—New Buildings	1,030	1,768	954	953	26
Roads Maintenance Trust	4,030	4,170	3,850	3,907	81
Rural and Industries Bank	2,748	3,367	1,455	1,526	28
Rural Reconstruction .....	....	....	3,486	3,430	56
State Electricity Commission Loans—Sinking Fund	523	339	375	322	975
Tourist Fund	1,081	1,200	1,308	1,177	589
Transport Commission	3,285	2,747	3,452	3,499	915
Vermion Act	1,103	1,562	918	1,450	129
Western Australian Museum	684	600	755	820	71
Other	6,970	4,764	11,665	8,261	17,632
Total	264,452	263,180	307,719	296,167	49,117
Funds financed from Commonwealth grants and advances—					
Aboriginal Advancement	1,749	1,729	2,642	1,796	908
Science Buildings and Equipment—					
Government Schools	541	568	474	357	142
Independent Schools	415	473	443	391	52
Housing—					
Commonwealth-State Housing Agreement	35,205	38,405	30,601	31,111	253
Home Builders	4,114	6,576	2,578	2,425	249
War Service Homes	5,134	5,147	5,115	5,069	49
Non-productive Capital Works	18,680	18,680	21,090	21,090	....
Ord River Dam Construction	5,747	5,745	4,687	4,584	20
Petroleum Products Subsidy	4,528	4,346	5,189	5,189	370
Pharmaceutical Benefits	2,869	2,869	3,320	3,320	....
Roads—					
Beef Cattle Roads	1,014	1,160	1,822	1,828	29
Commonwealth Aid Roads Acts	39,149	38,336	40,968	44,975	1,181
Rural Reconstruction Scheme .....	....	....	6,500	6,500	....
Softwood Forestry Agreement	424	1,033	56	56	....
South-West Region Water Supplies	1,815	1,815	2,000	2,000	....
Technical Training—Buildings and Equipment	810	751	833	608	234
Water Resources	252	252	685	685	....
Other	5,678	5,261	9,098	9,418	1,395
Total	128,123	133,147	138,099	141,401	4,881
Private trust funds—					
Clerk of Courts	7,894	8,036	7,577	7,609	231
Coal Mine Workers' Pensions	637	646	662	558	105
Esperance Railway Standardisation .....	....	....	2,090	1,930	160
Public Trustee Common Fund	10,248	10,221	11,069	10,771	636
Superannuation Fund	15,130	14,681	18,917	19,121	247
Superannuation Investment Reserve	5,115	66	7,712	29	53,825
Workers' Compensation in Suspense	580	556	505	464	107
Other	5,245	*5,886	6,296	5,535	6,964
Total	44,848	40,092	54,828	46,016	62,274
GRAND TOTAL	437,423	436,419	500,646	483,584	116,272

* Revised.

LOCAL GOVERNMENT FINANCE

The financial powers of local government authorities in Western Australia are derived principally from the *Local Government Act, 1960-1973*, the main provisions of which are outlined in Chapter III—*Constitution and Government*. Among other statutes affecting local government finance are the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act and the Fire Brigades Act.

General Revenue

The following table gives a summary of the revenue (other than loan revenue) of local government authorities during the five years 1967-68 to 1971-72.

SUMMARY OF LOCAL GOVERNMENT REVENUE (a)
(\$'000)

Source of revenue	1967-68	1968-69	1969-70	1970-71	1971-72
Taxation—					
Rates—					
Municipal	16,819	19,500	22,530	25,630	30,368
Water Board	240	253	291	320	341
Vermin Board	74	77	71	46	35
Licences and fees—					
Dog	41	37	41	44	48
Building	197	280	346	317	322
Other (b)	97	109	134	161	210
Total (b)	17,467	20,255	23,414	26,517	31,325
Public works and services—					
Income from property and plant—					
Parks, gardens and other recreational facilities	1,135	1,440	1,784	1,883	2,602
Halls and other buildings	802	829	1,005	1,607	1,485
Vehicles and plant	1,153	1,215	1,252	1,547	1,529
Land sales	1,565	2,356	2,319	3,299	2,517
Other property	1,214	1,111	2,016	1,192	1,192
Contributions for road construction, etc. (c)	3,545	3,811	4,640	5,430	5,287
Sanitation charges (including garbage services) (d)	1,519	1,370	1,629	1,978	2,475
Other works and services—					
Municipalities	1,155	2,792	1,550	2,190	2,528
Water Boards	89	87	85	178	165
Vermin Boards	13	19	17	18	22
Total	12,190	15,029	16,296	19,324	19,802
Government grants and reimbursements—					
Roads (e)—					
Central Road Trust Fund (f)	4,813	4,912			
Main Roads Trust Account	3,998	4,554	15,748	16,908	18,128
Metropolitan Traffic Trust Account (f)	865	825	(g) 13		
Unemployment relief					1,074
Recreational facilities (h)	289	309	333	797	1,095
Electricity supply	21	11	13	12	5
Water Boards	1	1	1	1	27
Vermin destruction bonuses—					
Municipalities	8	5	7	5	3
Vermin Boards	9	7	13	12	7
Other	100	188	230	378	717
Total	10,104	10,810	16,358	18,112	21,056
Vehicle licences and fees (i)	4,602	5,038	930	761	829
Electricity undertakings	3,068	3,044	3,660	4,089	4,101
Other revenue—					
Fines and penalties—					
Traffic	340	480	750	804	845
Other	20	22	33	34	34
Interest	366	544	737	1,043	1,185
Other	826	1,016	878	1,105	1,067
Total	1,552	2,061	2,397	2,986	3,131
GRAND TOTAL	48,984	56,239	63,056	71,789	80,244

(a) Loan receipts are excluded; for particulars see page 283. (b) Excludes revenue from vehicle licences (see 'Vehicle licences and fees' below) and sanitary and garbage fees (see 'Sanitation charges (including garbage services)' below). (c) Includes reimbursements from various government instrumentalities for road construction and repair. Excludes grants and reimbursements from the Main Roads Department, which are included in 'Government grants and reimbursements—Roads' shown below. (d) Excludes revenue received where the charge is incorporated in the general (municipal) rate. (e) Includes grants and reimbursements from the Main Roads Department; see also footnote (c). (f) From 1 July 1969 paid from Main Roads Trust Account as required by the *Main Roads Act Amendment Act, 1969*. (g) Arrears; see footnote (f). (h) Includes grants from the Western Australian Tourist Development Authority. (i) From 1 July 1969, revenue from motor vehicle licences (less an amount retained for costs of administration) and certain fees has been paid to the Main Roads Trust Account, as required by the *Traffic Act Amendment Act (No. 2), 1969*.

General Expenditure

The following table gives a summary of the expenditure of local government authorities during the five years 1967-68 to 1971-72. Expenditure from loan funds is not included, but appears in the next section *Loan Transactions*.

SUMMARY OF LOCAL GOVERNMENT EXPENDITURE (a)
(\$'000)

Nature of expenditure	1967-68	1968-69	1969-70	1970-71	1971-72
General administration	3,847	4,401	(b) 3,779	(b) 4,520	(b) 4,806
Debt services (c)—					
Interest—					
On loans—					
Municipalities	2,761	3,123	3,572	4,165	4,876
Water Boards	35	42	43	43	58
On overdraft	37	37	45	57	71
Redemption—					
Municipalities	4,389	4,991	5,556	6,241	6,736
Water Boards	57	66	69	80	80
Total (c)	7,279	8,259	9,285	10,585	11,821
Public works and services—					
Roads, paths and bridges—					
Construction and maintenance	14,054	15,952	20,818	23,003	23,823
Other road work	524	738	932	1,033	979
Street lighting	595	658	735	811	1,040
Property and plant—					
Parks, gardens and other recreational facilities	4,049	4,583	5,287	6,064	6,657
Halls and other buildings	2,448	2,224	2,681	3,929	6,014
Vehicles and plant	3,381	3,116	3,126	3,257	3,112
Other property	1,227	1,899	3,094	2,729	2,005
Other public works and services—					
Sanitary and garbage services	1,865	2,039	2,569	3,133	3,546
Other health services	773	924	1,059	1,148	1,348
Sundry works and services—					
Municipalities (d)	4,192	4,722	4,769	5,816	7,572
Water Boards	221	231	264	365	423
Vermin Boards	87	89	97	68	85
Total	33,417	37,175	45,430	51,354	56,607
Grants and donations—					
Western Australian Fire Brigades Board (e)	390	468	561	647	842
Hospitals and ambulances	36	48	43	31	32
Other	224	278	360	328	457
Total	651	794	964	1,006	1,331
Electricity undertakings (including debt services)	2,981	3,119	3,440	4,067	3,968
Other expenditure	417	636	808	600	529
GRAND TOTAL	48,591	54,384	63,706	72,132	79,063

(a) Loan expenditure is excluded; for particulars see page 283. (b) Figures not comparable with those for 1968-69 and earlier years due to a change in accounting procedures allowing an increased proportion of certain administrative expenditure to be charged to expenditure on roads. (c) Excludes debt services of electricity undertakings. (d) Includes contributions to Regional Traffic Councils. (e) Contributions required under the Fire Brigades Act.

Loan Transactions

Under the provisions of the local government legislation, local government authorities are constituted as corporate bodies and are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. The conditions imposed by the *Local Government Act, 1960-1973* in relation to loan raisings, the levying of loan rates, the expenditure of loan moneys and the repayment of loans are summarised on pages 117-19 under the heading *Financial Provisions*.

Loans are raised mainly from banks, insurance companies and superannuation funds. The State Government exercises a measure of supervision over the loan transactions of local government authorities and, where a loan is repayable in full at maturity, maintains the necessary sinking fund at the Treasury.

The following table gives a dissection of the loan receipts and expenditure of local government authorities in each financial year during the five-year period from 1967-68 to 1971-72.

LOCAL GOVERNMENT LOAN RECEIPTS AND EXPENDITURE (\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
RECEIPTS					
Municipalities—					
Ordinary services	10,193	12,163	12,914	14,438	12,141
Health services	77	419	410	756	895
Electricity undertakings	982	1,072	694	707	1,769
Water Boards	60	174	72	114	300
Total	11,313	13,828	14,089	16,014	15,105
EXPENDITURE					
Municipalities—					
Public works and services—					
Roads, paths and bridges	2,222	2,818	3,049	2,975	3,285
Parks, gardens and other recreational facilities	1,626	2,672	2,813	3,020	2,889
Halls and other buildings	3,036	3,309	3,263	4,971	3,437
Vehicles and plant	1,469	1,631	1,801	1,265	1,433
Electricity undertakings	1,087	976	921	925	1,290
Other works and services	268	487	1,118	1,276	1,902
Redemptions	40	16	58	—	—
Other loan charges, transfers, etc.	41	93	147	117	62
Water Boards	99	148	70	42	338
Total	9,889	12,150	13,240	14,592	14,636

The following table shows the aggregate local government loan debt outstanding at 30 June of each year during the period from 1968 to 1972.

LOCAL GOVERNMENT LOAN DEBT (\$'000)

Nature of debt	At 30 June—				
	1968	1969	1970	1971	1972
Loan debt outstanding	59,275	67,407	75,582	83,574	90,767
Sinking fund balances	109	8	11	12	4
Net loan debt	59,166	67,399	75,571	83,562	90,763
Net loan debt on account of—					
Ordinary services	52,962	60,124	67,622	76,394	82,053
Health services	1,407	1,615	1,918	2,495	3,240
Electricity undertakings	4,106	4,903	5,271	3,880	4,450
Water Boards	691	757	760	793	1,021
Total, Net loan debt	59,166	67,399	75,571	83,562	90,763

PENSION AND SUPERANNUATION SCHEMES

The Western Australian Government and many local government authorities and public corporations have established pension and superannuation schemes for eligible employees and their dependants, to which both employers and employees contribute. These schemes are operated either through separately constituted funds or through life insurance offices.

The *Superannuation and Family Benefits Act, 1938-1973* applies to employees of State Government Departments and some other public authorities. The Act establishes The Superannuation Fund and a Provident Account under the management of a Superannuation Board. Contributions made by the State are paid from the Consolidated Revenue Fund.

The *Superannuation, Sick, Death, Insurance, Guarantee and Endowment (Local Government Bodies' Employees) Funds Act, 1947-1950* enables local government authorities to establish funds to provide benefits for their employees. Contributions made by an authority are paid from its ordinary revenue.

GOVERNMENT PENSION AND SUPERANNUATION SCHEMES (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
OPERATED THROUGH SEPARATELY CONSTITUTED FUNDS					
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	3,603	4,089	5,252	6,956	8,237
Employers	4,340	5,121	6,108	6,712	7,359
Interest, dividends and rents	2,240	2 541	3,003	3,591	4,188
Other	57	236	174	178	159
Total	10,240	11,987	14,537	17,438	19,943
Expenditure—					
Pensions	4,840	5,750	6,482	7,776	8,631
Lump sum payments (b)	949	1,273	1,334	1,640	1,809
Other (c)	96	64	64	65	156
Total	5,885	7,086	7,879	9,481	10,595
Assets at end of year—					
Cash—					
Deposits with Treasury	314	2	501	297	1,565
Other deposits and cash	706	200	233	235	162
Australian Government securities	106	89	12	12	8
Local and semi-governmental securities	33,389	36,954	40,675	46,813	51,735
Mortgages—					
Housing	*....	*564	*803	*792	966
Other	*1,066	*1,155	*1,556	*2,087	2,206
Loans to building societies	440	776	*874	868	1,315
Company shares	454	453	547	705	823
Company debentures and notes	673	791	993	1,089	1,274
Other assets	5,377	6,591	7,957	9,509	11,167
Total	42,525	47,574	54,150	62,407	71,223
less sundry creditors, etc.	216	364	283	882	351
Accumulated funds	42,309	47,210	53,867	61,525	70,872
Contributors at end of year	number 19,330	number 19,910	number 21,766	number 24,210	number 26,291
Pensioners at end of year—					
Ex-employees	3,542	3,655	3,853	4,049	4,306
Widows	2,327	2,427	2,482	2,580	2,645
Children	220	209	225	238	235

OPERATED THROUGH LIFE INSURANCE OFFICES

Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	599	679	943	1,070	1,202
Employers	850	963	1,395	1,528	1,758
Surrenders	129	147	161	132	237
Death claims and matured policies	151	223	330	335	271
Other	9	12	23	13	33
Total	1,738	2,023	2,853	3,078	3,502
Expenditure—					
Premiums paid to insurance companies	1,423	1,712	2,261	2,521	2,904
Benefits to contributors—					
On retirement or death	149	215	327	327	293
On resignation or dismissal	106	133	133	118	205
Other	27	31	96	84	54
Total	1,705	2,090	2,816	3,049	3,457
Contributors at end of year	number 3,294	number 3,477	number 3,788	number 4,010	number 4,212

(a) Schemes established by the State Government, local government authorities, public corporations, the University of Western Australia and The Western Australian Institute of Technology. (b) On retirement, death, resignation or dismissal. Includes refunds of contributions. (c) Includes gratuities: \$187 in 1968-69; and \$2,124 in 1969-70. * Revised.

Parliamentary Superannuation Fund. The *Parliamentary Superannuation Act, 1970-1971* establishes a Parliamentary Superannuation Fund to provide superannuation, pensions and other benefits for former Members of the Parliament of Western Australia and their dependants. The Fund is financed from contributions paid by members and moneys appropriated from the Consolidated Revenue Fund.

PARLIAMENTARY SUPERANNUATION FUND

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Members	51	59	68	88	93
Government	56	95	137	175	314
Interest	31	34	37	39	44
Other ....	....	1	....	....	(b)
Total	138	189	242	302	450
Expenditure—					
Pensions	93	109	180	210	253
Lump sum payments (a)	6	6	75	....	2
Total	100	116	256	210	255
Assets at end of year—					
Cash deposits with Treasury	11	8	3	90	285
Australian Government securities	45	45	45	45	45
Local and semi-governmental securities	541	591	591	592	592
Other	8	53	21	25	25
Total	606	698	660	752	948
less sundry creditors, etc.	6	24	(b)	(b)	(b)
Accumulated funds	600	674	660	752	948
Contributors at end of year	number 81	number 81	number 81	number 81	number 80
Pensioners at end of year—					
Ex-members	29	26	37	33	32
Widows	26	23	27	31	33

(a) On retirement, death, resignation or dismissal. Includes refunds of contributions.

(b) Less than \$500.

Coal Mine Workers' Pensions Fund. The *Coal Mine Workers (Pensions) Act, 1943-1973* establishes a Coal Mine Workers' Pensions Fund to provide pensions and other benefits for persons formerly engaged in coal mining and for their dependants. The Fund is financed from contributions paid by employees and employers and moneys appropriated from the Consolidated Revenue Fund.

COAL MINE WORKERS' PENSIONS FUND

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	51	51	50	51	54
Employers	186	191	190	187	203
Government	80	90	91	93	120
Interest, dividends and rents	129	140	156	169	177
Total	446	472	487	499	554
Expenditure—					
Pensions	282	279	313	366	367
Lump sum payments—					
On retirement or death	6	9	8	3	4
On resignation or dismissal	6	8	13	18	1
Other ....	....	....	....	....	....
Total	294	296	334	386	372
Assets at end of year—					
Cash deposits with Treasury	1	9	(a)	105	55
Australian Government securities	118	118	118	118	118
Local and semi-governmental securities	2,331	2,499	2,657	2,666	2,894
Other	29	30	33	33	38
Total	2,478	2,656	2,808	2,922	3,104
less sundry creditors, etc.	3	5	4	4	5
Accumulated funds	2,475	2,651	2,804	2,917	3,099
Contributors at end of year	number 628	number 640	number 622	number 614	number 630
Pensioners at end of year—					
Ex-employees	278	276	274	278	285
Widows and children	208	205	210	227	245

(a) Less than \$500.

Chapter VI—continued

Part 2—Private Finance

CURRENCY

The power to legislate with respect to currency, coinage and legal tender and the issue of paper money is vested by the Constitution in the Commonwealth Parliament. This power was originally exercised by the Commonwealth Government under the Coinage Act of 1909 and the Australian Notes Act of 1910. These Acts, and later amendments, were superseded by the *Reserve Bank Act* 1965 and the *Currency Act* 1965, when a decimal currency system was adopted in Australia with effect from 14 February 1966.

Prior to 14 February 1966 the Australian currency was based on the system then in use in the United Kingdom, and therefore had as its unit the pound (£) divided into twenty shillings (s.) each of twelve pence (d.). The *Currency Act* 1965, which replaced the *Coinage Act* 1909-1947, provides for the adoption of a monetary unit known as the 'dollar', equivalent in value to ten shillings in the currency previously in use. The dollar is divided into 100 minor units, or 'cents'. Coins are in the denominations of 50 cents, 20 cents, 10 cents, 5 cents, 2 cents and 1 cent. The *Reserve Bank Act* 1965 authorises the issue of notes in the denominations of one dollar, 2, 5, 10, 20 and 50 dollars, or in any other denomination that the Treasurer determines. Notes currently issued are in the denominations of 1, 2, 5, 10, 20 and 50 dollars.

Australian notes are legal tender in Australia to any amount, coins of the denominations of 5, 10, 20 and 50 cents for amounts not exceeding five dollars, and two-cent and one-cent coins for amounts up to and including 20 cents.

Rates of Exchange

The following table shows the average telegraphic transfer selling rates of exchange for Sydney (New South Wales) on a selection of overseas countries. The figures appearing in the table, which are averages of daily quotations, are based generally on rates quoted by the Commonwealth Trading Bank of Australia.

OVERSEAS EXCHANGE RATES—AVERAGE TELEGRAPHIC TRANSFER SELLING RATES
SYDNEY ON OVERSEAS COUNTRIES: JUNE 1973

Country	Basis of quotation	Rate of exchange	Country	Basis of quotation	Rate of exchange
Austria	Schillings to \$A1	26.69	Japan	Yen to \$A1	370.31
Belgium (a)—			Netherlands	Guilders to \$A1	3.848
Financial rate	Francs to \$A1	52.88	New Zealand	Dollars to \$A1	1.064
Convertible rate	Francs to \$A1	52.80	Norway	Kroner to \$A1	7.72
Canada	Dollars to \$A1	1.4037	Noumea	Francs to \$A1	108.57
China, People's Republic of (b)	New Yuan to \$A1	2.70	Philippine Islands	Pesos to \$A1	9.417
Denmark	Kroner to \$A1	8.20	Singapore	Dollars to \$A1	3.470
Fiji	Dollars to \$A1	1.083	South Africa, Republic of	Rands to \$A1	0.9462
France (a)—			Spain	Pesetas to \$A1	81.55
Financial rate	Francs to \$A1	5.965	Sri Lanka (d)	Rupees to \$A1	8.476
Commercial rate	Francs to \$A1	5.988	Sweden	Kronor to \$A1	5.920
Germany, Federal Republic of	Deutsche Marks to \$A1	3.640	Switzerland	Francs to \$A1	4.297
Greece	Drachmae to \$A1	41.90	Thailand	Bahts to \$A1	27.67
Hong Kong	Dollars to \$A1	7.116	Union of Soviet Socialist Republics (b)	Roubles to \$A1	1.018
India	Rupees to \$A1	10.025	United Kingdom	Pounds to \$A1	0.548
Italy (a) (c)—			United States of America	Dollars to \$A1	1.4143
Financial rate	Lire to \$A1	855			
Commercial rate	Lire to \$A1	835			

(a) The 'convertible' rate shown for Belgium and the 'commercial' rate shown for France and Italy apply to trade transactions accompanied by documentation. In respect of other transactions the 'financial' rate applies. (b) Rate of exchange used in converting import values to Australian currency for the purpose of calculating customs duty. (c) 'Financial' rate and 'commercial' rate quoted from 1 February 1973. (d) Formerly Ceylon.

BANKING

The banking system in Western Australia comprises the Commonwealth banking institutions, The Rural and Industries Bank of Western Australia and the private trading banks.

Commonwealth Banking Institutions

Prior to the operation of the Reserve Bank Act and the Commonwealth Banks Act, passed by the Commonwealth Parliament in 1959, the Commonwealth banking institutions were the Commonwealth Bank, the Commonwealth Trading Bank and the Commonwealth Savings Bank. The Commonwealth Bank, in addition to performing the functions of a central bank, controlled the Australian note issue through a Note Issue Department and also provided special banking facilities through the Rural Credits Department, the Mortgage Bank Department and the Industrial Finance Department. The policy of the Banks was determined by a Commonwealth Bank Board.

The *Reserve Bank Act* 1959 repealed the Commonwealth Bank Acts, the first of which was passed in 1911, and established the Reserve Bank of Australia under the control of a Reserve Bank Board. The Reserve Bank was constituted as the central bank and took over the Note Issue Department and the Rural Credits Department of the former Commonwealth Bank. The function of the Rural Credits Department is to make available to statutory authorities or co-operative associations of primary producers advances to assist the marketing or processing of primary products.

The *Commonwealth Banks Act* 1959 constituted the Commonwealth Banking Corporation, which came into being on 14 January 1960 as the authority responsible for the operations of the Trading Bank, the Savings Bank and a new Development Bank. The Development Bank was formed basically from the Mortgage Bank Department and the Industrial Finance Department of the Commonwealth Bank, to provide finance and advice to persons to assist them in primary production or in the establishment or development of industrial undertakings, particularly small enterprises.

The Rural and Industries Bank of Western Australia

The Rural and Industries Bank of Western Australia was established by the State Government under the Rural and Industries Bank Act of 1944 to replace the former Agricultural Bank of Western Australia. The Bank consists of a Rural Department and a Government Agency Department, and management is vested in five Commissioners. The Rural Department provides general banking services and, since 1956, has also conducted savings bank business through a Savings Bank Division.

Trading Banks

At 30 June 1973 the trading banks conducting business in Western Australia comprised the Commonwealth Trading Bank of Australia, The Rural and Industries Bank of Western Australia (Rural Department), the Australia and New Zealand Banking Group Limited, The Bank of Adelaide, the Bank of New South Wales, the Banque Nationale de Paris, The Commercial Bank of Australia Limited, The Commercial Banking Company of Sydney Limited and The National Bank of Australasia Limited.

The operations of trading banks are governed by the *Banking Act* 1959-1973 (Commonwealth) which places them under a degree of control by the central bank, the Reserve Bank of Australia.

The following table shows the averages of total amounts on deposit with the trading banks and of their outstanding advances during each of the years 1968-69 to 1972-73. The figures relate to Western Australian business only and represent the annual average of amounts as at the close of business each Wednesday. The information is prepared from returns furnished under the requirements of the *Banking Act* 1959-1973 by all trading banks except The Rural and Industries Bank of Western Australia, which supplies information by special arrangement.

TRADING BANKS—AVERAGES OF DEPOSITORS' BALANCES AND BANK ADVANCES
(S'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Depositors' balances—					
Commonwealth and State Governments—					
Fixed	3,356	3,627	4,163	24,358	53,046
Current—					
Bearing interest	1,008	10	2	92	41
Not bearing interest	1,728	1,817	1,726	1,676	1,968
Other than Commonwealth and State Governments—					
Fixed	162,943	236,274	231,835	219,918	292,878
Current—					
Bearing interest	23,042	24,887	23,242	22,247	28,288
Not bearing interest	270,481	291,402	283,764	284,256	317,235
Total	462,559	558,017	544,732	552,546	693,456
Loans, advances and bills discounted (a)	280,147	323,824	351,110	357,410	443,330
Ratio of loans, advances, etc., to total balances (per cent)	60.6	58.0	64.5	64.7	63.9

(a) Excludes loans to authorised dealers in the short-term money market.

In the following table, which relates to Western Australian business only, the average amount on deposit with each trading bank and the average of its outstanding advances during the month of June 1973 are shown, together with the number of branches and agencies of each bank at 30 June 1973.

TRADING BANKS—BRANCHES, AGENCIES, DEPOSITS AND ADVANCES: JUNE 1973

Bank	Number of branches (a)	Number of agencies (a)	Depositors' balances (b)			Loans, advances, and bills discounted (b) (c)
			Not bearing interest	Bearing interest	Total	
Commonwealth Trading Bank of Australia	76	34	58,777	81,560	140,337	73,377
The Rural and Industries Bank of Western Australia (Rural Department)	69	24	42,127	50,205	92,331	132,779
Other trading banks—						
Australia and New Zealand Banking Group Limited	72	16	55,268	50,346	105,613	70,038
The Bank of Adelaide	2	3	3,112	6,356	9,468	3,471
Bank of New South Wales	117	30	96,139	88,969	185,107	122,429
Banque Nationale de Paris	1	....	657	9,986	10,642	1,544
The Commercial Bank of Australia Limited	39	12	23,675	27,260	50,935	39,481
The Commercial Banking Company of Sydney Limited	9	....	3,706	14,613	18,318	3,643
The National Bank of Australasia Limited	78	24	52,015	56,010	108,025	69,510
Total, Other trading banks	318	85	234,570	253,537	488,107	310,115
TOTAL, ALL TRADING BANKS	463	143	335,474	385,302	720,775	516,271

(a) At 30 June. (b) Averages based on amounts at close of business each Wednesday. (c) Excludes loans to authorised dealers in the short-term money market.

In July 1973 the outstanding advances of the trading banks, excluding The Rural and Industries Bank of Western Australia and the Banque Nationale de Paris, amounted in total to \$398.6 million. Business advances represented \$298.9 million, personal advances \$93.0 million, advances to non-profit organisations \$4.0 million, and to public authorities other than the Commonwealth and State Governments \$2.5 million. Business advances were mainly for rural industry (\$88.9 million), for retail and wholesale trade (\$63.8 million) and for manufacturing (\$27.1 million). Of the personal advances, loans for the building or purchasing of homes accounted for \$27.6 million.



PLATE 10—KURI BAY

Situated in Brecknock Harbour about 130 miles north-east of Derby, Kuri Bay is the site of the first pearl culture farm in Western Australia. In the aerial photograph overleaf, the rafts from which the oysters are suspended may be seen in the centre of the bay. A short account of the process of pearl culture appears in the *Appendix*.

Photograph by courtesy of the Department of Development and Decentralisation



PLATE II—GATHERING ROCK OYSTERS

Rock oysters, firmly embedded in the rocky foreshore, are shown being collected at Rosemary Island in the Dampier Archipelago, north-west of Roebourne.

Photograph by courtesy of the Department of Development and Decentralisation



PLATE 12—PERTH CENTRAL BUS STATION

Perth Central Bus Station was officially opened on 2 March 1973 by the Premier of Western Australia, the Hon. John Tonkin, M.L.A. Approximately 700 buses run to and from the terminal each day, carrying a total of more than 33,000 passengers. Station facilities include an Information Bureau, Lost Property Office, public address system, shops and kiosks.

Block by courtesy of the Metropolitan (Perth) Passenger Transport Trust



PLATE 13—RINGTAIL POSSUMS

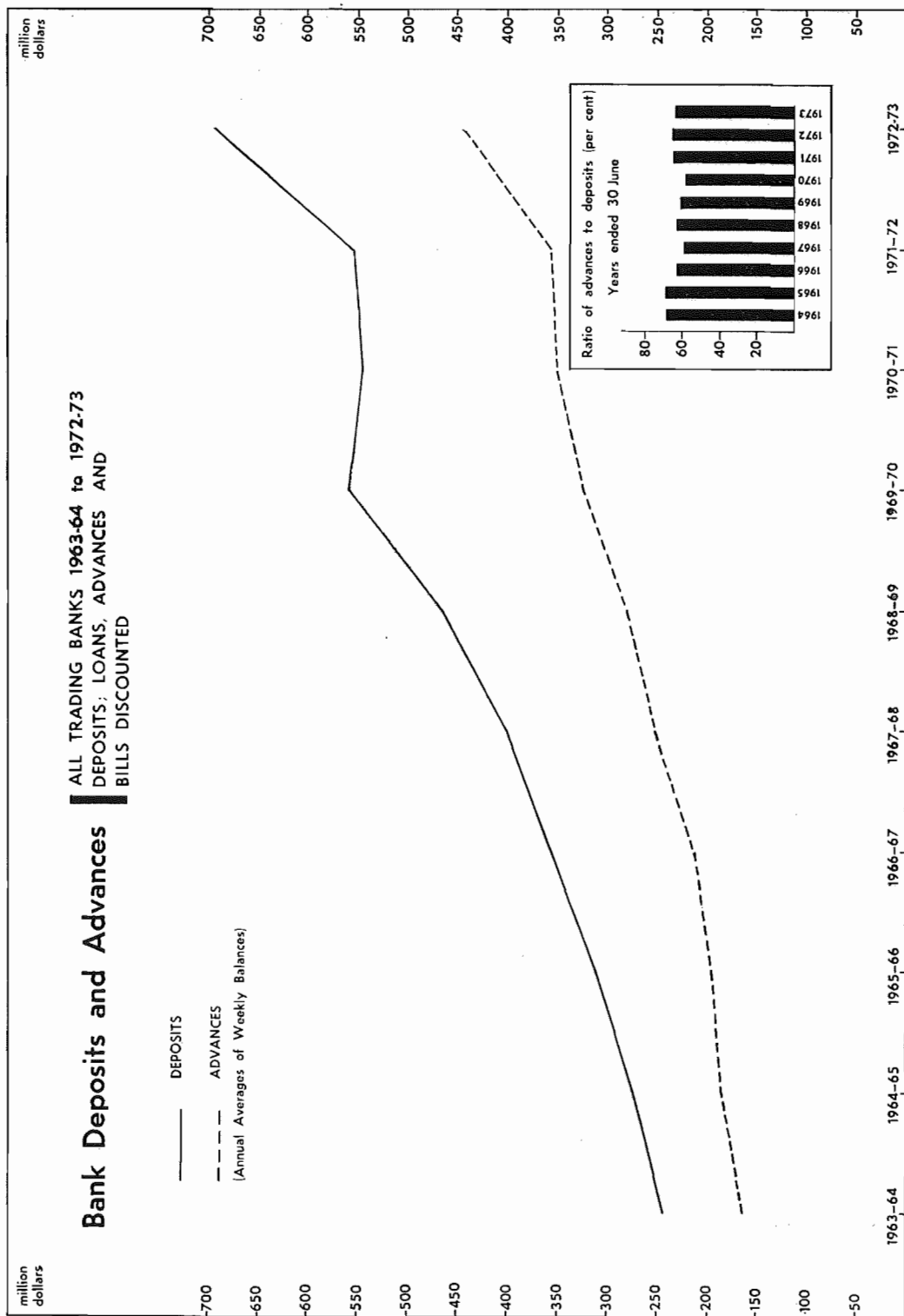
(*Pseudocheirus peregrinus*)

Female Ringtail Possum and young, photographed by the Forests Department during a spotlight survey in the Perup Fauna Area, a tract of approximately 40,000 hectares within the State Forest, east of Manjimup.

Block by courtesy of the Forests Department

Bank Deposits and Advances

ALL TRADING BANKS 1963-64 to 1972-73
DEPOSITS, LOANS, ADVANCES AND
BILLS DISCOUNTED



The following table contains particulars of the average weekly debits to customers' accounts in each year from 1968-69 to 1972-73 and in each quarter of those years. The figures represent the total of all cheques drawn by customers of all trading banks and, in addition, the Rural Credits Department of the Reserve Bank of Australia and the Commonwealth Development Bank of Australia. Debits to Commonwealth and State Government accounts at city branches are excluded as they are subject to abnormal influences. The figures are derived by averaging the debits made during weeks ended on Wednesdays during the several periods shown.

TRADING BANKS—AVERAGE WEEKLY DEBITS TO CUSTOMERS' ACCOUNTS (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
WEEKLY AVERAGE (\$ million)					
Average for quarter ended—					
September	182·6	227·8	267·6	304·1	315·9
December	210·2	254·8	310·7	322·3	336·8
March	221·6	246·9	297·9	328·4	359·9
June	221·8	255·7	307·3	318·9	412·0
Average for year	209·0	246·4	295·3	318·4	355·9
PER HEAD OF MEAN POPULATION (dollars)					
Average for quarter ended—					
September	198·4	237·4	268·3	293·8	299·2
December	225·7	262·5	308·0	308·7	317·0
March	235·1	251·6	292·2	312·1	337·0
June	233·3	258·6	299·0	302·5	385·3
Average for year	223·3	252·8	291·4	304·2	334·4

(a) Excludes debits to Commonwealth and State Government accounts at city branches; see letterpress immediately preceding table.

Bank Charges. In October 1962 the trading banks discontinued the interstate exchange rates previously charged and instituted a system of charges on current accounts. The charges, comprising three separate elements, are calculated quarterly and debited as one composite item. In addition to a basic maintenance fee of 75c per quarter there is a ledger activity fee increasing with the number of transactions each quarter, and a collection fee on cheques deposited in excess of twenty per quarter. Rebates are allowable on ledger activity fees where credit balances are maintained at the level of \$1,000 or more throughout the quarterly period.

Savings Banks

At 31 December 1973, savings banks operating in Western Australia comprised the Commonwealth Savings Bank of Australia, The Rural and Industries Bank of Western Australia (Savings Bank Division), the Australia and New Zealand Savings Bank Limited, The Bank of Adelaide Savings Bank Limited, the Bank of New South Wales Savings Bank Limited, The Commercial Savings Bank of Australia Limited, the C.B.C. Savings Bank Limited and The National Bank Savings Bank Limited.

Individual depositors may not operate on their savings bank accounts by cheque, but cheque accounts are generally available to non-profit organisations such as friendly, co-operative and charitable societies. Interest is paid on deposits with savings banks and no charge is made for the keeping of accounts. A school savings bank service is provided and its operations, except for the number of accounts open at the end of each year, are included in the figures shown in the following table.

SAVINGS BANK TRANSACTIONS

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Deposits (a)	\$'000 663,653	719,324	781,226	893,458	1,058,068
Withdrawals (a)	\$'000 637,254	714,719	763,788	864,129	981,107
Excess of deposits over withdrawals	\$'000 26,399	4,605	17,438	29,329	76,961
Interest added to accounts	\$'000 12,983	14,288	15,295	17,518	19,716
Accounts open at end of year (b)	No. 1,036,180	1,096,466	1,153,420	1,205,448	1,250,576
Depositors' balances at end of year—					
Total	\$'000 412,984	431,877	464,611	511,457	608,133
Average per operative account	\$ 398.6	393.9	402.8	424.3	486.3
Average per head of population	\$ 433	436	451	486	569

(a) Includes inter-branch transfers but excludes transfers from and to other States.
(i.e. accounts of less than \$2 which have not been operated on for more than two years).

(b) Excluding inoperative accounts

The following table, which relates to Western Australian business only, shows the number of branches and agencies of each of the savings banks at 30 June 1973. The amount of depositors' balances held by each bank at the end of June 1973 is also shown. This information, together with similar particulars for each of the other Australian States, is published monthly in the *Australian Government Gazette*, and is prepared from returns furnished under the requirements of the *Banking Act 1959-1973* by all savings banks except The Rural and Industries Bank of Western Australia (Savings Bank Division), which supplies information by special arrangement.

SAVINGS BANKS—BRANCHES, AGENCIES AND DEPOSITS
JUNE 1973

Bank	Number of branches (a)	Number of agencies (a)	Depositors' balances (b)
Commonwealth Savings Bank of Australia	94	682	264,826
The Rural and Industries Bank of Western Australia (Savings Bank Division)	69	372	123,782
Other savings banks—			
Australia and New Zealand Savings Bank Limited	72	466	55,377
The Bank of Adelaide Savings Bank Limited	2	8	1,399
Bank of New South Wales Savings Bank Limited....	117	361	101,017
The Commercial Savings Bank of Australia Limited	39	48	16,790
C.B.C. Savings Bank Limited	9	8	2,177
The National Bank Savings Bank Limited	78	79	42,765
Total, Other savings banks	317	970	219,525
TOTAL, ALL SAVINGS BANKS	480	2,024	608,133

(a) At 30 June. (b) Particulars for the Commonwealth Savings Bank and The Rural and Industries Bank of Western Australia (Savings Bank Division) relate to 30 June, and those for other savings banks to the last Wednesday in June.

In December 1969 approval was given by the Reserve Bank of Australia to a proposal for the establishment of a new type of savings bank account on which interest could be paid at rates almost 1 per cent above the general deposit rate paid at that time by most savings banks. The holder of such an account is required to give three months' notice before a withdrawal may be made. The account must also have, at all times, a minimum balance of \$500 and transactions are in minimum amounts of \$100. The maximum rate of interest payable on these 'investment' accounts at 30 June 1973 was 5.00 per cent per annum.

Bank Interest Rates

The following table shows bank interest rates current at 30 June 1973, the dates from which they became operative, and the rates which were applicable prior to those dates.

BANK INTEREST RATES AT 30 JUNE 1973

Particulars	Rate per annum	Date from which operative	Previous rate per annum
	per cent		per cent
LENDING RATES			
Trading banks—			
Overdraft—			
Less than \$50,000 (a)	7.75	1972—4 February	8.25
\$50,000 and over	(b)	4 February	8.25
Unsecured personal loans (a) (c)	6.25	4 February	6.50
Commonwealth Development Bank of Australia—			
Rural loans (d)	6.25	1969—1 August	6.00
Industrial loans (d)	7.25	1970—6 April	6.75
Reserve Bank of Australia, Rural Credits Department—			
Government-guaranteed loans	5.00	1969—8 August	4.75
Other loans	5.25	8 August	5.00
Savings banks—			
Housing loans to individuals	(e) 6.25–7.00	1970—1 April	(f) 6.25
Other loans—			
Less than \$50,000 (a)	7.75	1972—10 March	8.25
\$50,000 and over	(b)	10 March	(a) 8.25
DEPOSIT RATES			
Trading banks—			
Fixed deposits of less than \$50,000 (a)—			
3 months and less than 12 months	4.30	1972—4 February	5.00
12 months and less than 2 years	4.50	4 February	5.00–5.30
2 years and less than 4 years	5.00	4 February	5.30–6.00
4 years	5.50	4 February	6.50
Fixed deposits of \$50,000 and over (a) (b)—			
30 days to 4 years	6.50	4 February	5.50–6.50
Certificates of deposit of \$50,000 and over (a) (b)—			
3 months to 24 months	6.50	4 February	5.50
Savings banks (g)—			
Ordinary accounts (h)—			
\$4,000 and under	3.75–5.00	1970—1 April	3.75–4.00
Over \$4,000	4.25–5.00	1 April	3.75–4.00
Investment accounts (i)	5.00	1972—10 March	5.25

(a) Maximum rate. (b) Actual rates are a matter for negotiation between banks and their customers. (c) Flat rate.
 (d) Basic rate. (e) Range of rates predominantly charged. (f) Predominant rate. (g) The maximum interest-bearing amount in any one account is \$20,000 for Ordinary accounts (\$10,000 from 1 March 1967 to 30 March 1970) and \$50,000 for Investment accounts (from 19 April 1973). These limits do not apply to cheque accounts of friendly and other societies.
 (h) The lower rate shown has predominated in the case of most banks; The Rural and Industries Bank of Western Australia has paid the higher rate. (i) Subject to notice and minimum balance requirements (see previous page).

INSURANCE

General Insurance

General insurance is available to the public in Western Australia from a number of companies and, in some fields, from the State Government Insurance Office. There is also a Motor Vehicle Insurance Trust whose activities are confined to motor vehicle third party insurance.

During 1972-73, there were 150 companies operating in Western Australia. The majority of these were 'tariff' offices, being members of the Fire and Accident Underwriters' Association and issuing the standard policies of the Association at uniform premium rates. The remainder were 'non-tariff' companies effecting insurances at competitive rates and reinsuring direct with Lloyd's or other underwriters.

The State Government Insurance Office covers fire, marine and general insurance risks for State Government instrumentalities and semi-government and local government authorities. It also conducts some classes of insurance business for the general public, the principal transactions being workers' compensation and comprehensive motor vehicle insurance. By authority of amendments to the State Government Insurance Office Act in 1954 and 1958 the Office engages in personal accident insurance in respect of school children and students under a policy which indemnifies the parent or guardian against the cost of medical and surgical treatment and funeral and other expenses.

The following table gives details of revenue and expenditure relating to fire, marine and general insurance during each of the years from 1968-69 to 1972-73. It contains

only selected items of statistics and is therefore not suitable for the construction of a 'Profit and Loss' statement or 'Revenue Account'. The amounts shown as 'Premiums' represent the full amount receivable in respect of policies issued or renewed during the year, less returns, rebates and bonuses paid or credited to policy holders during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from 'earned premium income' appropriate to the year. The amounts shown as 'Claims' include provision for outstanding claims and represent claims or losses incurred during the year. Salvage and other amounts recoverable have been deducted. The transactions of The Motor Vehicle Insurance Trust are not included, but are shown in the table on page 295. The figures shown under the heading of 'Contributions to fire brigades' represent payments made to the Western Australian Fire Brigades Board for the operation and maintenance of fire brigades, as required by the Fire Brigades Act.

FIRE, MARINE AND GENERAL INSURANCE (a)
(\$'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
REVENUE					
Premiums—					
Motor vehicles....	15,697	18,073	20,290	22,456	23,360
Fire	7,676	8,815	10,392	11,130	11,962
Workers' compensation	9,609	11,138	12,197	13,187	12,877
Householders' comprehensive	3,935	4,995	5,716	6,557	6,990
Personal accident	2,555	3,105	3,616	4,130	4,238
Hailstone	1,479	1,065	1,065	1,129	1,089
Marine	2,069	2,603	2,964	3,519	3,632
Other classes	4,546	5,847	7,633	8,953	9,410
Total premiums	47,566	55,641	63,873	71,061	73,558
Other (interest, dividends, rents, etc.—net)	1,711	1,703	1,726	2,102	2,312
Total revenue	49,277	57,343	65,599	73,163	75,870
EXPENDITURE					
Claims—					
Motor vehicles....	11,676	13,154	14,946	16,324	15,890
Fire	2,614	3,096	4,210	3,988	3,813
Workers' compensation	8,192	8,528	8,616	10,047	12,558
Householders' comprehensive	1,961	1,516	1,663	1,900	2,283
Personal accident	1,019	1,094	1,336	1,684	1,513
Hailstone	267	273	374	816	777
Marine	1,117	1,177	1,342	1,790	1,755
Other classes	1,923	2,397	3,306	3,476	3,831
Total claims	28,769	31,237	35,793	40,025	42,420
Other—					
Management expenses....	9,410	11,259	12,711	14,636	15,379
Commission and agents' charges	4,029	4,860	5,687	6,321	6,694
Taxation.....	792	1,117	1,683	1,901	2,005
Contributions to fire brigades	1,299	1,459	1,826	2,257	2,816
Total expenditure	44,299	49,931	57,700	65,140	69,315

(a) Excludes transactions of The Motor Vehicle Insurance Trust (see table on page 295). Operations of the State Government Insurance Office are included.

Life Insurance

Life insurance business throughout Australia is regulated by the *Life Insurance Act* 1945-1973 (Commonwealth), which requires companies to be registered by the Insurance Commissioner appointed under the Act and to establish statutory funds in relation to their life insurance transactions. The purpose of the Act, which supersedes State legislation, is to place life insurance business on a uniform basis throughout the Commonwealth and to afford protection to policy holders. Under a previous Commonwealth Act, the *Insurance Act* 1932-1966, the companies were required to deposit money or approved securities with the Treasurer in order to guarantee the claims of insured persons, and this provision is continued by the present Act.

At 30 June 1973, there were thirty-eight life insurance companies or societies operating in Western Australia. In terms of total sums insured, life insurance policies relate predominantly to ordinary endowment or whole-of-life insurance and superannuation, although an appreciable volume of industrial business is also undertaken.

Details of policies, sums insured and annual premiums for each class of business are given in the following table for the years 1968-69 to 1972-73.

LIFE INSURANCE

Year	New policies issued			Policies discontinued or reduced			Policies, etc. existing at end of year		
	Policies	Sum insured	Annual premiums	Policies	Sum insured	Annual premiums	Policies	Sum insured	Annual premiums
	Number	\$'000	\$'000	Number	\$'000	\$'000	Number	\$'000	\$'000

ORDINARY BUSINESS

1968-69	....	....	42,467	264,783	5,583	17,959	56,676	1,308	373,909	1,279,496	31,465
1969-70	....	....	45,621	316,911	6,470	21,120	79,092	1,823	398,410	1,517,315	36,112
1970-71	....	....	50,911	371,518	7,265	23,699	107,492	2,364	425,622	1,781,341	41,013
1971-72	....	....	56,542	450,762	8,615	26,614	134,119	2,868	455,550	2,097,984	46,760
1972-73	....	....	53,650	488,421	8,510	29,342	157,803	3,283	479,858	2,428,602	51,987

INDUSTRIAL BUSINESS

1968-69	....	....	11,266	12,650	521	10,742	6,765	288	168,640	72,587	2,984
1969-70	....	....	10,435	13,004	538	11,160	7,222	304	167,915	78,368	3,218
1970-71	....	....	9,447	16,462	561	10,785	8,033	333	166,577	86,798	3,446
1971-72	....	....	9,101	16,122	560	12,488	10,108	384	163,190	92,812	3,621
1972-73	....	....	8,890	15,768	555	15,650	11,095	420	156,430	97,484	3,756

SUPERANNUATION BUSINESS

1968-69	....	....	6,212	61,713	2,069	4,813	19,904	577	40,887	235,889	8,151
1969-70	....	....	6,513	71,024	2,210	4,311	33,558	1,281	43,089	273,355	9,079
1970-71	....	....	7,237	108,457	3,488	4,880	43,304	1,427	45,446	338,508	11,140
1971-72	....	....	6,816	100,288	3,113	4,691	51,451	1,751	47,571	387,345	12,502
1972-73	....	....	6,513	115,867	3,479	4,954	51,293	1,657	49,130	451,919	14,324

ORDINARY, INDUSTRIAL AND SUPERANNUATION BUSINESS

1968-69	....	....	59,945	339,147	8,173	33,514	83,345	2,172	583,436	1,587,972	42,600
1969-70	....	....	62,569	400,938	9,218	36,591	119,872	3,409	609,414	1,869,038	48,409
1970-71	....	....	67,595	496,437	11,314	39,364	158,828	4,123	637,645	2,206,647	55,599
1971-72	....	....	72,459	567,171	12,288	43,793	195,678	5,004	666,311	2,578,140	62,884
1972-73	....	....	69,053	620,052	12,543	49,946	220,192	5,360	685,418	2,978,000	70,067

Motor Vehicle Third Party Insurance

Third party insurance in connection with motor vehicle accidents became compulsory on 1 July 1944 under the provisions of the Motor Vehicle (Third Party Insurance) Act of 1943. The Motor Vehicle Insurance Trust was established by an amendment to the Act in 1948 and comprises the general manager of the State Government Insurance Office, three members nominated by the Fire and Accident Underwriters' Association of Western Australia, and one nominee of those participating approved insuring organisations which are not members of the Association.

The Trust administers a Motor Vehicle Insurance Fund in which approved insurers participate. Premiums received from motor vehicle third party insurance and revenue from other sources constitute annual 'pools' and, after payment of claims and other expenses appropriate to each pool, the resulting profit or loss is shared by the participating insurers, which include the State Government Insurance Office. These shares cannot be finally determined until the last claim is paid and it is usually several years before a

pool has satisfied all the claims attributable to it. For this reason, the figures given in the following table are subject to progressive revision as the business of each pool approaches finality.

THE MOTOR VEHICLE INSURANCE TRUST
(£'000)

Revenue and expenditure	Pool (a) for the year—				
	1968-69	1969-70	1970-71	1971-72	1972-73
Revenue—					
Premiums	9,297	12,570	14,322	15,222	(b) 20,416
Interest received	1,670	2,256	2,200	1,456	573
Total revenue	10,966	14,826	16,523	16,678	(b) 20,989
Expenditure—					
Claims (c)	10,182	12,506	12,913	13,996	(d) 13,914
Commission	51	64	68	70	71
Management expenses	241	289	361	433	385
Taxation	17	20	16	10	9
Total expenditure	10,491	12,879	13,357	14,508	(d) 14,379

(a) See accompanying letterpress *Motor Vehicle Third Party Insurance*. Figures are revised to 30 June 1973. (b) Inclusive of \$4.55 million unearned premiums. (c) Includes estimate for claims outstanding. (d) Includes estimate of \$3.11 million for claims not notified.

Health Insurance Organisations

Voluntary health insurance is offered by a number of organisations which provide one or more types of benefit covering such items as hospital and medical fees, funeral expenses and sick pay to or on behalf of contributing members and their dependants. They include societies registered under the *Friendly Societies Act, 1894-1964* and other organisations registered under the *National Health Act 1953-1973* (Commonwealth).

Benefits are available in a wide range to meet the cost, either wholly or in part, of such services as treatment by a general or specialist medical practitioner (including surgical operations and obstetrical attention), X-ray, cardiographic and pathological examinations, physiotherapy, dental treatment, hospital care, home nursing and ambulance transport. In many cases, the Australian Government pays a benefit additional to that received from the organisation. Reference to these additional benefits is made in Chapter V—*Social Conditions*. Members of friendly societies may contribute also for the supply of medicines and some societies maintain endowment assurance funds and supplementary death benefit funds.

The following tables give details, for the years 1968-69 to 1972-73, of the membership and the financial activities of friendly societies registered under the *Friendly Societies Act*. 'Benefit' members are those who contribute to the Sick and Funeral Fund of a society and 'other' members are principally those who pay only for medical and hospital benefits.

FRIENDLY SOCIETIES—NUMBER, MEMBERS AND SICKNESS BENEFITS

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Registered societies	11	11	11	11	11
Branches	248	246	246	243	238
Members at end of year—					
Benefit members of sick and funeral fund	15,465	15,175	14,841	14,087	13,781
Other members	37,658	38,648	39,628	50,304	56,141
Sickness benefits—					
Number of members paid	2,179	2,158	1,945	1,877	1,692
Number of weeks of sick pay	51,857	50,580	48,633	48,189	46,785

FRIENDLY SOCIETIES—REVENUE AND EXPENDITURE (\$'000)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Revenue—					
Fees, contributions and levies	2,587	2,756	2,947	3,734	4,018
Interest, dividends and rent	153	178	192	193	193
Other	141	73	260	91	153
Total revenue	2,881	3,008	3,399	4,018	4,364
Expenditure—					
Sick pay....	38	39	38	38	35
Medical attendance and medicine	2,337	2,521	2,660	3,294	3,699
Death benefits	51	44	44	52	44
Administration	194	202	227	260	285
Other	144	134	114	*246	204
Total expenditure	2,764	2,940	3,082	3,889	4,267
Balance of funds at end of year	4,027	4,095	4,411	4,541	4,638

* Revised.

CO-OPERATIVE SOCIETIES

Co-operative societies are divided into three classes, namely (i) those engaged in the manufacture and marketing of primary products and trade requirements, (ii) those engaged in retailing general household requirements, and (iii) those engaged in activities covered by both classes (i) and (ii). The first class may be described briefly as producers' co-operative societies and the second as consumers' co-operative societies. Co-operative societies in Western Australia are registered under the provisions of the *Companies (Co-operative) Act, 1943-1959* or the *Co-operative and Provident Societies Act, 1903-1973*.

CO-OPERATIVE SOCIETIES

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of societies	69	67	66	68	67
Number of members	64,900	65,770	66,062	53,984	56,869
Sales of goods	\$'000 75,884	\$'000 79,383	\$'000 79,544	\$'000 78,638	\$'000 70,842
Less Cost of goods sold	68,076	70,266	70,772	67,164	59,613
Trading profit	7,808	9,117	8,772	11,474	11,230
Add Other revenue—					
Commissions, charges, etc.	17,133	17,161	18,040	22,446	22,626
Other	3,602	3,925	4,471	4,979	5,689
Less Other expenditure—					
Administration, etc.	18,936	20,940	20,768	28,040	27,620
Interest	1,135	1,536	1,914	1,916	2,514
Depreciation	2,322	2,495	2,863	3,006	3,075
Net surplus	6,151	5,233	5,739	5,936	6,336
Dividends or interest paid	769	814	816	796	854
Rebates and bonuses	4,077	3,439	3,258	3,498	1,337
Amount provided for income tax	767	635	964	907	514
Liabilities—					
Members' funds—					
Paid-up capital	12,203	12,684	13,111	13,302	14,272
Accumulated profits (net)	89	Dr. 88	Dr. 132	169	Dr. 447
Reserves	11,046	11,413	9,485	9,984	13,768
Loan capital	47,867	52,607	54,691	60,827	102,514
Bank overdraft	7,354	14,145	11,605	5,120	3,715
Creditors	12,462	13,275	14,883	16,317	17,542
Other	3,087	3,136	5,010	4,593	3,675
Total	94,109	107,171	108,654	110,311	155,039
Assets—					
Land and buildings	7,520	8,318	9,531	10,809	9,887
Plant and machinery	46,704	56,523	53,904	55,821	63,091
Stocks	7,944	8,792	7,899	7,226	7,012
Debtors	23,624	25,918	28,869	27,357	29,831
Cash on hand and on deposit	2,111	1,987	1,947	2,114	36,968
Other	6,206	5,633	6,502	6,984	8,249
Total	94,109	107,171	108,654	110,311	155,039

The previous table gives details, for the years 1968-69 to 1972-73, of the number of societies, membership, financial operations, and liabilities and assets of co-operative societies in Western Australia. The financial years shown do not relate to a uniform accounting period, the actual period varying according to the financial year adopted by individual societies.

REGISTERED BUILDING SOCIETIES

Building societies in Western Australia are registered under the provisions of the *Building Societies Act, 1920-1970* primarily for the purpose of raising funds to assist members by granting loans, secured on mortgage, to build or acquire homes. They also provide a means of investment for shareholder members, trustee funds and other depositors. The funds of the societies may be in the form of payment for fully-paid shares, subscriptions for contributing shares, money placed on deposit, or negotiated loans. Another important source of revenue became available to the societies in 1956-57 when, under the *Housing Agreement Act 1956* (Commonwealth), it was provided that moneys should be allocated to approved institutions from Commonwealth funds advanced to the States for housing. The current legislation, the *Housing Agreement Act 1973* (Commonwealth), provides financial assistance to the States during the five-year period ending 30 June 1978. The Act requires that, of the total amount advanced to a State in any year, not less than 20 per cent nor more than 30 per cent (which may, however, be exceeded in certain specified circumstances) shall be made available to building societies and some other institutions for the provision of loans to assist borrowers to build or purchase homes for themselves and their families.

REGISTERED BUILDING SOCIETIES

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Societies on register at 30 June—					
Permanent	15	15	15	15	11
Terminating	266	303	339	375	416
Shareholders	56,556	92,152	122,136	153,117	204,227
Borrowers	20,885	27,513	30,716	37,122	44,475
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans paid over during year	48,650	91,481	84,150	107,007	138,838
Working expenses (a)	3,355	4,479	5,876	7,416	9,430
Liabilities—					
Investing members' funds	36,607	112,407	166,644	234,968	320,120
Borrowing members' funds	2,122	2,187	2,315	2,475	1,687
Deposits	42,122	49,700	70,720	96,272	135,715
Loans due to—Government	25,565	28,058	32,619	33,568	38,979
Other	26,127	27,403	28,835	29,709	30,625
Other liabilities (b)	1,141	2,361	1,840	3,960	3,473
Total liabilities	133,686	222,116	302,972	400,953	530,600
Assets—					
Advances on mortgages (b)	115,933	191,669	255,704	334,111	436,858
Other assets	17,752	30,446	47,268	66,842	93,742
Total assets	133,686	222,116	302,972	400,953	530,600

(a) Includes administration expenses and interest on borrowed funds but not interest on investing members' funds, borrowing members' funds, or deposits. (b) Excludes loans in process and advances approved but not yet paid.

The Building Societies Act provides for the constitution of a Building Societies Advisory Committee of five members, comprising the Registrar of Building Societies as chairman, the President of the State branch of the Commonwealth Institute of Valuers, two persons who are qualified and experienced in building society management and practice, and an officer of the State Public Service nominated by the Minister.

The functions of the Committee, as set out in the Act, are to make recommendations and submit proposals to the Minister with respect to regulations and model rules to be made under the Act; any action to be taken for promoting, encouraging and assisting in the formation of societies; improving the methods of operation of societies; charges which

societies may make on and require to be paid by their members, other than share subscriptions and repayment of advances; the financing of societies in their operations and the protecting of the finances of societies; promoting the building of dwelling-houses by co-operative effort; determining and specifying the minimum standards of construction of dwelling-houses and other buildings to be accepted before advances can be made; and such other matters as the Minister refers to the Committee from time to time, or as may be prescribed.

INSTALMENT CREDIT FOR RETAIL SALES

The statistics in the following tables cover all types of instalment credit schemes which relate primarily to the financing of retail sales of goods in which repayment is made by regular predetermined instalments. Types of schemes covered include hire purchase, time payment, budget account and personal loans which relate primarily to the financing of retail sales of goods. In these statistics the term 'retail sales' relates not only to retail sales by retail establishments coming within the scope of the Censuses of Retail Establishments conducted periodically by the Commonwealth Statistician, Canberra (see Chapter IX, Part 2), but includes also other sales of goods to final purchasers (e.g. plant and machinery).

Credit schemes which do not involve repayment by regular predetermined instalments, lay-bys, and all credit transactions which relate mainly to the financing of 'producer' type goods such as plant, machinery and motor vehicles which would normally be used for commercial purposes are outside the scope of these statistics. In addition the instalment credit transactions of businesses covered by these statistics which relate primarily to the financing of sales of land, buildings, property improvements, travel and services such as repair and maintenance work, and schemes involving rental or leasing are not included.

In the next two tables, two major classifications of instalment credit statistics are adopted: type of credit and type of business.

The term 'retail businesses' in the latter category relates to retailers who provide their own finance, and also to subsidiary finance businesses set up by retailers (or by groups engaged mainly in retail trading), primarily for the purpose of financing their retail sales. All other businesses engaged in instalment credit financing of retail sales, irrespective of whether their main activity is finance, constitute 'non-retail finance businesses'.

More detailed information regarding classifications used in the following tables may be found in the monthly series *Instalment Credit for Retail Sales* published by the Commonwealth Statistician, Canberra.

Details of the balances outstanding at 30 June 1969 to 1973, according to type of credit and type of business, are given in the following table. In interpreting movements in outstanding balances, it should be noted that these movements are determined not only by new amounts financed and cash collections under existing agreements, but also by other liquidations of balances such as rebates allowed for early payouts and bad debts written off.

INSTALMENT CREDIT FOR RETAIL SALES—BALANCES OUTSTANDING (a)
(\$ million)

At 30 June—	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Retail (b)	Non-retail finance	Total
1969	132.9	38.0	27.6	143.3	170.9
1970	146.7	40.7	24.7	162.6	187.3
1971	168.5	35.9	23.2	181.2	204.4
1972	178.6	33.8	21.4	191.0	212.4
1973	192.7	32.8	23.3	202.1	225.4

(a) Includes hiring charges, interest and insurance, primarily for financing their retail sales.

(b) Includes subsidiary finance businesses set up by retailers pri-

The following table shows for broad commodity groups the amount financed according to type of credit and type of business during the period 1968-69 to 1972-73.

INSTALMENT CREDIT FOR RETAIL SALES—AMOUNT FINANCED (a)
(\$ million)

Year	Type of credit		Type of business		
	Hire purchase	Other instalment credit	Retail (b)	Non-retail finance	Total
MOTOR VEHICLES, TRACTORS, ETC.					
1968-69	60.2	21.7	6.2	75.7	81.9
1969-70	73.2	20.0	5.1	88.1	93.2
1970-71	89.0	12.5	4.2	97.3	101.5
1971-72	92.1	13.7	3.8	102.0	105.8
1972-73	97.9	12.7	4.4	106.2	110.6
PLANT AND MACHINERY					
1968-69	12.6	4.7	2.0	15.3	17.3
1969-70	11.4	5.2	1.0	15.5	16.6
1970-71	13.0	0.8	0.6	13.2	13.8
1971-72	10.8	0.8	0.5	11.1	11.6
1972-73	15.3	1.4	0.5	16.2	16.7
HOUSEHOLD AND PERSONAL GOODS					
1968-69	14.0	11.4	18.7	6.7	25.4
1969-70	15.1	11.0	19.0	7.1	26.1
1970-71	16.0	11.2	19.4	7.8	27.2
1971-72	15.8	12.4	20.3	7.9	28.2
1972-73	17.4	14.5	23.5	8.4	31.9
TOTAL					
1968-69	86.8	37.8	26.9	97.7	124.7
1969-70	99.7	36.2	25.2	110.7	135.9
1970-71	118.0	24.5	24.2	118.3	142.5
1971-72	118.7	26.8	24.6	121.0	145.6
1972-73	130.6	28.5	28.4	130.8	159.2

(a) Excludes hiring charges, interest and insurance.
primarily for financing their retail sales.

(b) Includes subsidiary finance businesses set up by retailers pri-

FINANCE COMPANIES

Information relating to the lending operations of finance companies in Western Australia is given in the following tables. A comprehensive account of the scope of the statistics, definitions, and more complete details of the transactions of finance companies are given in the annual bulletin *Finance Companies Transactions* and the monthly statement *Finance Companies*, published by the Commonwealth Statistician, Canberra. Details of breaks in continuity of the series, indicated by a line drawn across a column between two consecutive figures, are given in the annual bulletin for the year 1972-73.

For the purpose of these statistics, finance companies are defined as companies which are engaged mainly in providing to the general public (businesses as well as persons in their private capacity) credit facilities of the following types: hire purchase and other instalment credit for retail sales; wholesale finance; other consumer and commercial loans; and factoring. The finance companies covered in these statistics, in so far as they provide credit for retail sales, are also included in the statistics shown in the preceding section *Instalment Credit for Retail Sales*.

Amount Financed. The following table shows the amount financed, according to type of agreement, i.e. instalment credit for retail sales, wholesale finance, personal loans, other consumer and commercial loans, in Western Australia for the years 1968-69 to 1972-73.

FINANCE COMPANIES—AMOUNT FINANCED : TYPE OF AGREEMENT
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans	Total
1968-69	83.0	81.9	5.9	105.0	275.8
1969-70	98.1	90.5	5.8	106.3	300.8
1970-71	106.8	102.3	3.8	73.9	286.7
1971-72	108.3	121.1	6.6	*73.9	310.0
1972-73	112.5	130.9	8.5	121.1	372.9

* Revised.

Collections and other Liquidations of Balances. The following table shows the collections and other liquidations of balances, according to type of agreement, *i.e.* instalment credit for retail sales, wholesale finance, and other consumer and commercial loans, made by finance companies in Western Australia for the years 1968-69 to 1972-73.

FINANCE COMPANIES—COLLECTIONS AND OTHER LIQUIDATIONS OF BALANCES
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans		Total, all contracts
				Contracts including charges	Contracts excluding charges	
1968-69	90.3	80.9	(a)	53.1	33.6	258.0
1969-70	107.2	87.8	(a)	60.6	45.0	300.6
1970-71	122.3	100.5	5.8	45.5	52.7	326.8
1971-72	*134.9	115.1	5.7	44.3	62.5	*362.5
1972-73	145.3	135.1	8.1	51.7	77.4	417.6

(a) Not available separately; included in *Other consumer and commercial loans*.

* Revised.

Balances Outstanding. The following table shows the balances outstanding in Western Australia, according to type of agreement, and the total balances outstanding at the end of each year from 1968-69 to 1972-73.

FINANCE COMPANIES—BALANCES OUTSTANDING : TYPE OF AGREEMENT
(\$ million)

Year	Instalment credit for retail sales	Wholesale finance	Personal loans	Other consumer and commercial loans		Total, all contracts
				Contracts including charges	Contracts excluding charges	
1968-69	122.0	12.2	(a)	96.0	46.2	276.3
1969-70	143.0	16.1	(a)	100.6	74.6	334.4
1970-71	162.7	19.6	7.2	91.1	76.4	356.9
1971-72	171.2	27.2	9.8	79.6	*77.2	365.0
1972-73	177.1	26.6	12.6	64.5	107.4	388.3

(a) Not available separately; included in *Other consumer and commercial loans*.

* Revised.

Business Plant and Equipment on Lease. The following table shows the initial capital cost of business plant and equipment on lease and the balances outstanding in Western Australia at the end of each year from 1968-69 to 1972-73.

**FINANCE COMPANIES—BUSINESS PLANT AND
EQUIPMENT ON LEASE**
(\$ million)

Year	Initial capital cost of goods newly leased during year	Balances outstanding at end of year
1968-69	11.2	18.4
1969-70	16.9	27.4
1970-71	21.5	37.5
1971-72	21.3	48.9
1972-73	30.1	58.2

Instalment Credit for Retail Sales. The following table shows additional details, for Western Australia, of the total instalment credit for retail sales transactions of finance companies. Amount financed is dissected by type of commodity, and collections and other liquidations of balances are divided into cash collections and other liquidations.

FINANCE COMPANIES—INSTALMENT CREDIT FOR RETAIL SALES
(\$ million)

Year	Amount financed during year					Collections and other liquidations during year			Balances outstanding at end of year
	New motor vehicles, tractors, etc.	Used motor vehicles, tractors, etc.	Plant and machinery	Household and personal goods	Total	Cash collections	Other liquidations	Total	
1968-69	33.8	34.2	10.4	4.6	83.0	86.1	4.2	90.3	*122.0
1969-70	36.1	42.9	11.9	7.3	98.1	102.0	5.2	107.2	143.0
1970-71	39.5	50.6	8.5	8.2	106.8	115.4	6.9	122.3	162.7
1971-72	*38.6	*55.1	6.5	*8.4	*108.4	*125.6	*9.3	*134.9	171.2
1972-73	34.1	62.2	8.8	7.3	112.4	133.9	11.5	145.2	177.1

* Revised.

BANKRUPTCY

Under the provisions of the *Bankruptcy Act* 1966-1973 (Commonwealth), which is administered by the Attorney-General, the State of Western Australia is a proclaimed Bankruptcy District and the Supreme Court of Western Australia has federal jurisdiction in bankruptcy matters. There is a Registrar in Bankruptcy whose duties include the holding of public sittings for the examination of bankrupts, the examination of witnesses, the issuing of bankruptcy notices and creditors' petitions, and such other duties as are specified in the Act or delegated to him by the Court. Another bankruptcy officer is the Official Receiver, who acts under the general authority and direction of the Court and whose duties relate to the conduct of the debtor and to the realisation and administration of his estate.

An order for the sequestration of an estate may result from a petition by either the debtor or the creditors. In cases where it appears certain that the assets of a deceased estate will be insufficient to meet the debts, the executor or a creditor may petition to have the estate administered in bankruptcy.

Compositions, deeds of assignment and deeds of arrangement are provided for in the Act. A debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the \$ as full settlement of his debts or enter into a deed of arrangement allowing him a specified time in which to pay. On the other hand, his creditors may require him to execute a deed of assignment, by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

The following table relates to bankruptcy proceedings during each of the years from 1968-69 to 1972-73.

BANKRUPTCY PROCEEDINGS

Year	Sequestration orders (a)				Compositions and assignments without sequestration (b)		
	On petition of—		Assets (\$'000)	Liabilities (\$'000)	Number	Assets (\$'000)	Liabilities (\$'000)
	Creditors	Debtors					
1968-69	18	206	495	1,081	60	896	1,100
1969-70	11	218	847	1,924	64	1,098	1,421
1970-71	3	289	637	2,322	98	2,483	2,702
1971-72	21	387	1,300	3,478	110	2,839	3,806
1972-73	18	346	3,498	3,693	108	2,017	3,381

(a) Includes orders for administration of deceased persons' estates.

(b) Includes deeds of arrangement.

PUBLIC TRUST OFFICE

The *Public Trustee Act, 1941-1972* establishes the Public Trust Office administered by the Public Trustee.

The principal functions of the Public Trustee are the administration of the estates of deceased persons, including intestate estates; the management of the affairs of certain persons rendered incapable by mental illness or other infirmity; and the receipt of moneys under the control or order of the Supreme Court of Western Australia, to be invested and used for the maintenance, education or other benefit of the persons entitled thereto. The Public Trustee receives from the Workers' Compensation Board funds to be held in trust for investment and to be paid out at the direction of the Board. He may also act in the capacity of agent in cases of need.

PUBLIC TRUST OFFICE

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Matters accepted for administration—					
Estates of—					
Deceased persons	1,283	1,354	1,262	1,317	1,339
Mentally incapable persons	477	414	339	390	371
Infirm persons	10	21	23	31	40
Uncared-for property	1	—	4	3	3
Court trusts	175	230	262	275	167
Workers' compensation	125	96	105	102	102
Agencies	25	28	23	20	23
Total	2,096	2,143	2,018	2,138	2,045
Matters on hand at 30 June	5,604	6,069	6,279	6,535	6,276
Value of transactions—	\$'000	\$'000	\$'000	\$'000	\$'000
Trust moneys received	8,157	9,522	9,391	9,829	10,745
Trust moneys paid	7,201	8,601	8,322	8,577	10,076
Unclaimed moneys paid to Consolidated Revenue Fund	49	18	34	84	50
Value of estates and other matters on hand at 30 June	29,539	30,282	32,276	33,781	35,311

OFFICE OF TITLES

The Office of Titles is established under the provisions of the *Transfer of Land Act, 1893-1972*. The Act provides for the appointment of a Commissioner of Titles, a Deputy Commissioner of Titles and a Registrar of Titles. The principal functions of the Office are the registration and recording of all instruments and dealings affecting privately-owned land or land alienated from the Crown, the certification and issue of titles to land, and the maintenance of a register of legal ownership.

The number of documents accepted for registration during the year ended 30 June 1973 was 146,890, an increase of 19.7 per cent from the number in 1971-72.

OFFICE OF TITLES

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of registrations—					
Certificates of title—					
Crown grant	1,924	2,731	1,559	1,344	1,746
Other	20,939	19,363	19,095	21,878	25,247
Leases—					
Crown	508	363	254	269	257
Other	10	18	47	35	42
Transfers	44,928	38,015	31,700	35,618	45,599
Mortgages	38,031	33,970	29,085	31,901	39,775
Discharges of mortgages	29,481	27,075	24,126	26,750	31,877
Caveats lodged	5,442	5,778	6,910	8,684	8,643
Amount of consideration—	\$'000	\$'000	\$'000	\$'000	\$'000
Transfers	494,271	482,253	385,759	436,966	644,383
Mortgages	370,314	398,059	410,195	445,488	567,646
Fees collected	870	866	785	860	1,544
Expenditure	617	796	891	1,033	1,143
Assurance Fund—					
Amount of credit at 30 June	231	246	260	278	296

COMPANIES REGISTRATION OFFICE

The Registrar of Companies is responsible, subject to the Minister, for the administration of the *Companies Act, 1961-1973*, the *Business Names Act, 1962*, the *Associations Incorporation Act, 1895-1969* and the *Bills of Sale Act, 1899-1973*.

The following table gives a summary of operations under these Acts during the five-year period ended 31 December 1972.

COMPANIES REGISTRATION OFFICE

Particulars	1968	1969	1970	1971	1972
Number of registrations effected—					
Local companies (a)	1,631	2,176	2,524	*1,969	1,584
Foreign companies (b)	315	422	*624	529	386
Business names	13,528	15,119	16,624	16,340	17,300
Associations	79	111	113	141	164
Bills of sale and liens—					
Registrations	44,674	48,287	71,467	87,165	81,896
Satisfactions entered	561	638	562	745	790
Nominal capital of local companies registered during year	\$'000	\$'000	\$'000	\$'000	\$'000
Amounts of bills of sale and liens—					
Registrations	138,603	141,496	208,059	303,542	113,435
Satisfactions entered	2,994	5,822	4,708	5,790	6,919
Fees collected (c)	508	704	1,030	1,226	1,454

(a) Companies incorporated in Western Australia. (b) A company incorporated outside Western Australia is required to register as a 'foreign' company if carrying on business in Western Australia. (c) Year ended 30 June. * Revised.

THE STOCK EXCHANGE OF PERTH LIMITED

The Stock Exchange of Perth commenced operations in 1889, and conducted business at a number of locations before moving in December 1968 to its present quarters at Exchange House. These premises were designed and constructed to provide adequate space for total post trading which was introduced in July 1967, replacing the call system in which brokers made bids from their desks as stocks were called by a member of the Exchange staff.

The Stock Exchange of Perth was registered as a limited company under the provisions of the Companies Act on 30 June 1971. There were thirty-five members of the Exchange at 30 June 1971, thirty-four at 30 June 1972, and thirty-three at 30 June 1973.

The following table gives details of turnover during the three-year period ended 30 June 1973. A revised system of sales recording was introduced in 1970-71 to include both on and off-room sales, and comparable figures for earlier years are not available.

THE STOCK EXCHANGE OF PERTH LIMITED
TURNOVER OF STOCKS AND SHARES
 (Figures supplied by The Stock Exchange of Perth Limited)

Particulars	1970-71	1971-72	1972-73
NUMBER OF SHARES TRADED			
	'000	'000	'000
Ordinary—			
Industrial	26,232	21,935	22,480
Oil	27,949	17,384	21,448
Mining	167,127	67,828	66,899
Preference—			
Industrial	} 68	{ 174	158
Mining			
.....		22	6
Total	221,377	107,343	110,992
VALUE OF TURNOVER			
	\$'000	\$'000	\$'000
Shares—			
Ordinary—			
Industrial	29,500	27,831	30,501
Oil	5,081	5,768	8,327
Mining	112,162	22,425	20,567
Preference—			
Industrial	} 99	{ 185	155
Mining			
.....		21	4
Total	146,843	56,230	59,553
Commonwealth and semi-government loans	2,007	1,066	3,128
Debentures, unsecured notes, etc.	1,038	1,577	2,904
Total	3,044	2,642	6,032
Total value of turnover	149,887	58,872	65,585

LOTTERIES AND BETTING

Lotteries

The Lotteries Commission was established under the provisions of the *Lotteries (Control) Act, 1932*. The legislation currently in force is the *Lotteries (Control) Act, 1954-1972*. The Commission, as constituted by the Act, consists of four members appointed by the Minister. The principal functions of the Commission are to conduct lotteries in Western Australia to raise money for charitable purposes, and to control lotteries conducted by other persons.

The Act requires that all prizes distributed in lotteries conducted by the Commission shall be cash prizes. It is further provided that the total expenses of conducting lotteries in any year, including commission payable on ticket sales and the remuneration of members of the Commission, shall not exceed 25 per cent of the gross amount received from the sale of tickets.

The Commission is required to pay 20 per cent of all moneys received in respect of lotteries that it conducts into a special account, which is kept at the Treasury in terms of the *Hospital Fund Act, 1930-1937*. Moneys remaining to the credit of the Commission after meeting all outgoings authorised by the Act may, with the consent of the Minister, be applied to any approved charitable purpose or in the purchase, improvement or maintenance of lands and buildings for the purposes of the Act.

The following tables show the number of lotteries conducted by the Commission during the five-year period ended 30 June 1973, the number of tickets sold, the receipts from ticket sales, and the financial transactions of the Commission.

LOTTERIES COMMISSION—NUMBER OF CONSULTATIONS AND TICKET SALES

Year	Type of lottery								Total
	\$5	\$4	\$3	\$2	\$1.99	\$1	50c	25c	
NUMBER OF CONSULTATIONS									
1968-69	2	2	....	....	8	26	72	110
1969-70	9	2	....	8	72	....	92
1970-71	1	7	....	11	77	....	97
1971-72	1	7	....	15	84	....	107
1972-73	2	....	3	1	18	85	....	110
NUMBER OF TICKETS SOLD ('000)									
1968-69	200	150	....	....	800	2,600	7,200	*10,950
1969-70	450	100	....	800	7,200	....	8,600
1970-71	50	450	....	1,100	7,700	....	9,350
1971-72	100	700	....	1,500	8,400	....	10,700
1972-73	200	....	300	100	1,800	8,500	....	11,000
RECEIPTS FROM TICKET SALES (\$'000)									
1968-69	800	450	....	....	800	1,300	1,800	5,150
1969-70	1,350	200	....	800	3,600	....	6,200
1970-71	150	900	....	1,100	3,850	....	6,250
1971-72	300	1,400	....	1,500	4,200	....	7,400
1972-73	800	....	600	199	1,800	4,250	....	8,149

* Revised.

LOTTERIES COMMISSION—FINANCIAL TRANSACTIONS

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
GENERAL ACCOUNT (\$'000)					
Receipts from ticket sales	5,150	6,200	6,250	7,400	8,149
Expenses—					
Prize money	3,001	3,757	3,803	4,506	4,958
Commission on ticket sales	421	479	485	572	624
Salaries and superannuation	98	108	108	125	141
Advertising	120	136	175	175	191
Other	*72	*77	*85	*87	99
Total	3,713	4,557	4,656	5,465	6,012
Surplus available for distribution	1,437	1,643	1,594	1,935	2,137
ACCUMULATED FUNDS ACCOUNT (\$'000)					
Balance at beginning of year	236	243	276	251	301
Surplus available for distribution	1,437	1,643	1,594	1,935	2,137
Unclaimed prizes	78	118	92	104	97
Rent and interest received	31	36	68	71	87
Other	9	83	37	2	8
Total	1,791	2,123	2,067	2,363	2,630
Grants approved	1,539	1,835	1,807	2,052	2,245
Prizes paid	6	6	7	7	8
Other	3	6	2	3	3
Total	1,548	1,847	1,816	2,062	2,256
Balance at end of year	243	276	251	301	374
AMOUNT OF GRANTS PAID (\$'000)					
Hospitals and medical and health services	1,298	1,089	1,334	1,560	1,794
Homes, orphanages and mission centres	293	169	208	172	186
Infant health services	16	2	7	9	7
Other charitable organisations	188	212	244	245	287
Total	1,795	1,472	1,793	1,986	2,274

* Revised.

Betting

The *Betting Control Act, 1954-1972* and the *Totalisator Agency Board Betting Act, 1960-1973* provide for the regulation and control of betting and bookmaking on horse racing in Western Australia.

The Betting Control Act authorises the Totalisator Agency Board to issue licences enabling the holder to carry on the business of bookmaking on a race-course or at registered premises, and betting by or with a person not so licensed is unlawful.

The Totalisator Agency Board Betting Act gives the Totalisator Agency Board authority to regulate and control off-course betting on totalisators through the Board and betting with the Board. The Board consists of seven members appointed by the Governor, and comprises a chairman nominated by the Minister, three persons nominated by The Western Australian Turf Club, and three persons nominated by the Western Australian Trotting Association.

The application of the Act is confined to areas declared by proclamation to be 'totalisator agency regions'. The first agency established by the Board was opened on 18 March 1961. At 31 July 1973 there were 166 agencies in operation.

The Board derives its principal revenues from commission on bets and from a duty of $1\frac{1}{2}$ per cent on the gross takings of every totalisator, as provided by the *Totalisator Duty Act, 1905-1973*. The Board may also borrow money, subject to the approval of the Treasurer. It is required that the balance of the Board's funds, after meeting all taxes, expenses and allocations, shall be paid in specified proportions to The Western Australian Turf Club and the Western Australian Trotting Association.

Details of taxes, licence fees and duties payable in connection with horse racing are shown on page 270 and the amounts collected during the five-year period ended 30 June 1972 appear in the table *State Government Taxation—Net Amounts Collected* on page 274.

The following table shows the amounts invested on totalisators on race-courses and through agencies of the Totalisator Agency Board, and amounts invested with licensed bookmakers, during the five-year period ended 30 June 1973.

TOTALISATOR INVESTMENTS AND INVESTMENTS WITH LICENSED BOOKMAKERS

Type of investment	1968-69	1969-70	1970-71	1971-72	1972-73
	\$'000	\$'000	\$'000	\$'000	\$'000
Totalisator investments—					
On course	8,708	10,920	12,301	14,471	15,314
Off course (a)	44,229	49,993	55,351	68,072	77,060
Total	52,938	60,913	67,652	82,543	92,375
Investments with licensed bookmakers—					
On course	31,836	38,625	39,656	41,693	44,260
Off course	353	347	122	146	22
Total	32,189	38,972	39,778	41,840	44,282
All investments—					
On course	40,544	49,545	51,957	56,165	59,574
Off course	44,582	50,339	55,473	68,218	77,082
Total	85,126	99,884	107,430	124,383	136,657
Per head of mean population	\$ 91	\$ 102	\$ 106	\$ 119	\$ 128

(a) Investments made through agencies of the Totalisator Agency Board.

CHAPTER VII

LAND TENURE AND SETTLEMENT, WATER SUPPLY AND SEWERAGE

Part 1—Land Tenure and Settlement

An outline of the origin and development of the land tenure system in Western Australia from the early years of settlement is given in Chapter VII of the *Official Year Book of Western Australia*, Nos. 1 and 2 (New Series).

The growth of land settlement in relation to particular agricultural and pastoral activities is dealt with in the relevant sections of Chapter VIII and in the *Statistical Summary from 1829* appearing after Chapter X.

LEGISLATION AND ADMINISTRATION

By the Land Act of 1898, earlier legislation relating to the sale, occupation and management of Crown lands was consolidated and amended. Under a series of Agricultural Lands Purchase Acts which were passed between 1896 and 1904 and consolidated by the *Agricultural Lands Purchase Act, 1909*, provision was made for the repurchase by the Crown of land suitable for closer settlement. The principal criteria applied in the purchase of such land were suitability for wheat or mixed farming and proximity to transport, especially the railways.

The operation of subsequent legislation has not greatly changed the pattern of land development which was created by the *Land Act, 1898* and the *Agricultural Lands Purchase Act, 1909*. The *Land Act, 1933-1971* is now the basic statute controlling the leasing and disposal of Crown land. Closer settlement legislation relates predominantly to schemes for the benefit of returned war-service personnel. Crown land is also leased under the *Mining Act, 1904-1973*, the *Petroleum Act, 1967-1972* and the *Forests Act, 1918-1972*, but no alienations are made under these Acts. In most freehold or leasehold titles of a residential, agricultural or pastoral nature the mineral rights, petroleum rights and, in many instances, the timber rights are reserved to the Crown.

The Department of Lands and Surveys is responsible for the leasing and alienation of Crown land, except where mining and forestry tenures are involved, and is under the control of the Minister for Lands. In certain instances, advisory or partly-executive boards have been created to assist in administration. These include the Land Board, which deals with general applications for land, and the Pastoral Appraisal Board.

Permits and leases for mining purposes are issued by the Department of Mines and those for forestry and timber milling by the Forests Department.

METHODS OF LAND ALIENATION

The principal methods of alienation provided for in the *Land Act, 1933-1971* are conditional purchase, public auction, private tender, selection under Part VIII which supersedes the Agricultural Lands Purchase Act, endowment (including free Crown grants) and reservation for public purposes. In addition to these normal methods of alienation there is provision in the Land Act for the release of land under special circumstances, where particular developmental projects are envisaged. In such cases any agreement must be ratified by the State Parliament.

The various methods of land alienation are described in greater detail in Chapter VII of the *Western Australian Year Book*, No. 8—1969 and earlier issues.

METHODS OF LEASING

Brief reference was made on page 307 to the work of the Department of Lands and Surveys, the Department of Mines and the Forests Department in granting leases of Crown lands in Western Australia. A summary of the activities of each Department in this field is given below, further details appearing in Chapter VII of the *Western Australian Year Book*, No. 8—1969, No. 6—1967 and earlier issues.

Department of Lands and Surveys

Approximately 98 per cent of the Crown land held under lease is covered by tenures granted by the Department of Lands and Surveys under the Land Act, and consists mainly of pastoral leases, special leases, leases of reserves and leases of residential lots. In addition, areas of perpetually-leased farming land have been made available to ex-servicemen under War Service Land Settlement Acts.

Department of Mines

Under the provisions of the *Mining Act, 1904-1973*, various special tenures, of which gold-mining leases, mineral leases and coal-mining leases are the most important, are granted by the Governor in connection with the mining of gold, coal and other minerals. The Act contains provisions relating to the payment of fees, rents and royalties. The Governor may exempt any person or class of persons from the payment of royalties.

Oil search permits and licences are granted by the Minister for Mines, and petroleum leases by the Governor under the provisions of the *Petroleum Act, 1967-1972* and the *Petroleum (Submerged Lands) Act, 1967-1970*, with authority to charge fees, rents and royalties.

Forests Department

While not designated as leases, certain of the tenures issued under the *Forests Act, 1918-1972*, such as Sawmilling Permits and Mill Site Permits, are similar in effect. A number of other leases, licences and permits are issued by the Forests Department, one of which, the Forest Produce Licence, authorises the licensee to collect various types of forest products other than millable timber. Permits are also granted for apiary sites of an area not exceeding 1.21 hectares.

LAND CLASSIFICATION

Large-scale as well as detailed soil survey measures have been developed progressively in Western Australia since the early days of settlement. Soil mapping of Crown lands in Western Australia has always been carried out as a function of the Department of Lands and Surveys. In the early years of land settlement the staff surveyors, when marking blocks, submitted classifications and commented generally on the probable yield and carrying capacity of the land, as a guide to pricing.

Modern survey techniques enable much use to be made of photogrammetric methods in the mapping and presentation of the soil survey, particularly in definition of vegetation and topographical detail such as rivers, creeks, swamps, hills, valleys, features such as rock outcrops and sand drifts, and the general contours of the land. Much topographical detail is available from the State mapping activities and this information is always used in conjunction with the field work of the soil survey.

The soils are graded into eight categories, to facilitate pricing procedure, due regard being given to the agricultural potential as determined by analysis and experimentation by the Department of Agriculture. This enables release of land in such a manner that each unit is adequate if developed on economic methods. At the same time, the soil maps assist in the overall planning for provision and extension of services such as roads, water and power supplies, townsites and all the services essential to regional development.

Pastoral potential appraisements are presented with more emphasis on the grazing potential of natural vegetation in order to assess estimated carrying capacities, rather than detailed soil types.

In addition to the soil and pastoral mapping surveys which are carried out under the direction of the Surveyor General, similar methods are used by other Government Authorities and private organisations, for forestry assessment, classification and control, and for geological mapping.

It has been estimated by the Surveyor General that, of the State's total area of 2,527,629 square kilometres about 11 per cent is represented by the agricultural areas, 52 per cent by the pastoral regions and the remaining 37 per cent by practically unoccupied areas of the interior. Soil mapping investigations have enabled a broad assessment of the total area and a detailed assessment of the bulk of the agricultural areas and pastoral regions.

OCCUPATION OF LAND

The following table shows, for a selection of years during the period from 1900 to 1972, the areas of land absolutely alienated or in process of alienation and of Crown land held under certain types of lease or licence. For the years 1900, 1910 and 1920 the basis of classification according to Department has been made to conform to current practice in the issue of leases and licences. For example, tenures relating to forests, which were originally issued by the Department of Lands and Surveys and later by the Department of Mines, have been shown for those years under the heading of Forests Department. For 1930 and later years the figures are as recorded by the Departments concerned. The types of tenure included under the several departmental headings are indicated in the footnotes to the table.

LAND ALIENATED AND LAND HELD UNDER LEASE
(⁰000 hectares)

At 31 December—	Area absolutely alienated	Area in process of alienation	Area of leases or licences in force on Crown land and issued (a) by—			
			Department of Lands and Surveys		Department of Mines (c)	Forests Department (d)
			Pastoral leases	Other leases (b)		
1900	1,401	1,278	34,977	4	34	345
1910	1,835	5,551	67,203	224	43	522
1920	3,623	5,958	104,420	999	42	664
1930	5,937	8,610	90,693	358	34	539
1940	7,408	5,602	82,875	843	38	954
1950	8,727	4,788	(e) 79,212	1,400	41	1,448
1960	11,158	5,185	88,301	2,685	37	1,617
1968	13,335	6,169	96,409	2,885	42	1,640
1969	13,885	5,734	96,554	2,591	58	1,513
1970	13,929	5,832	98,982	2,548	49	1,377
1971	14,104	5,441	99,466	2,559	54	1,339
1972	14,300	5,232	99,515	2,407	58	1,238

(a) See letterpress preceding table.

(b) Comprises special leases, leases of reserves, leases of residential lots and perpetual leases.

(c) Comprises gold-mining leases, mineral leases and miners' homestead leases.

(d) Predominantly sawmilling permits. Includes permits for cutting wandoo for tannin extraction, but excludes permits and licences for cutting timber and firewood in Goldfields areas.

(e) Apparent decrease in area due mainly to revision in the records of the Department of Lands and Surveys.

Land which is shown as 'absolutely alienated' consists mainly of farming areas, acquired originally as conditional purchase leases and subsequently alienated under Crown grant. While held under lease prior to alienation they account for most of the land

shown as 'in process of alienation'. These two sets of figures taken together consequently give a broad indication of the increased use of land for agricultural purposes during the period under review. Similarly, variations in the area occupied as sheep and cattle stations may be gauged by reference to the area of pastoral leases issued by the Department of Lands and Surveys.

The passing of the Homesteads Act in 1893 and of a comprehensive Land Act in 1898 provided the basis for a rapid increase in the settlement of agricultural land. Under the Homesteads Act, any man over the age of 18 years who did not already own an area of 100 acres (40.5 hectares) or more in this State could apply for a free homestead farm of 160 acres (64.7 hectares), on condition that he resided on his land during at least six months of each of the first five years and carried out prescribed improvements. With a lower minimum age of 16 years, a similar provision is contained in the *Land Act, 1933-1971*, and this provision, operating in conjunction with the conditional purchase lease system, has also been a factor in the increase in land settlement, particularly in the wheat-growing areas.

About 1905 the Department of Lands and Surveys, by implementing a system of survey and subdivision before selection, partially checked the indiscriminate selection of land by inexperienced farmers. A further stabilising influence on agricultural development was the introduction in 1909 of a system of grading Crown lands into classes, First, Second and Third according to suitability for farming.

The movement of population from the goldfields to the wheat belt contributed to the increase in the area of land in process of alienation from 1,277,512 hectares in 1900 to 5,550,573 in 1910. The ultimate alienation of about one-third of this land by Crown grant is reflected in the greatly increased figures for 'absolutely alienated' land in 1920. Settlement of the wheat belt developed rapidly during and after the period 1910 to 1920, in spite of serious droughts which occurred in 1911 and 1914. Although the increased totals at 31 December 1930 were principally due to this development, they resulted in part from the acquisition during the previous ten years of farmland, mainly for dairying, in the south-west of the State under the Group Settlement Scheme. These holdings were individually much smaller than those in the wheat-growing districts, because of the type of farming and the heavy clearing costs, but the numbers involved made the total area taken up under the Scheme of some significance.

Pastoral leases, which comprise the greatest proportion of Crown land held under lease or licence, increased threefold between 1900 and 1920. The area actually held under pastoral lease conditions represents approximately one-third of the whole State. The aggregate area of gold-mining leases, mineral leases and miners' homestead leases, appearing in the table under the heading of Department of Mines, shows comparatively little variation since 1900. However, in recent years very large areas have been included in tenures issued under the provisions of the *Petroleum Act, 1967-1972* and in temporary reserves under the *Mining Act, 1904-1973*.

From 1930 the demand for land for agricultural purposes declined considerably, the principal reason being the lower farm commodity prices which prevailed for several years prior to the second World War. After 1945, however, the demand for land again increased, stimulated by the sharp rise in export prices, notably of wheat and wool, and later by the War Service Land Settlement Scheme. The area conditionally alienated in any one year reached a post-war peak of 691,161 hectares in 1953. During the next decade the area fluctuated between 285,657 hectares in 1956 and 499,591 hectares in 1962. The area then declined and by 1972 the area conditionally alienated was only 4,176 hectares, due to restrictions imposed on the release of Crown land by conditional purchase. A slight recovery occurred in 1973 when the area increased to 23,626 hectares.

The following table gives details of areas of land for which applications were approved, during each of the years 1968 to 1972, by the Department of Lands and Surveys for conditional alienation or allocation under lease or licence. The figures shown for any year do not necessarily represent land allotted for the first time, as they may include land previously held under any of the several forms of land tenure.

CROWN LANDS—AREA OF ALLOCATIONS
APPROVED BY DEPARTMENT OF LANDS AND SURVEYS (a)
 (Hectares)

Particulars	1968	1969	1970	1971	1972
Conditional alienation—					
Conditional purchase	319,288	120,909	151,268	63,155	2,825
Agricultural land purchases .....	.....	.....	.....	.....	.....
Town and suburban lots	139	125	185	315	133
Miscellaneous (b)	2,341	1,941	602	1,259	1,218
Total	321,768	122,976	152,055	64,729	4,176
Leases and licences—					
Pastoral leases and licences	782,403	1,104,145	3,717,152	1,885,277	631,340
Special leases	25,861	76,319	30,806	44,217	41,187
Miscellaneous leases (c)	15,426	20,385	17,642	5,772	9,763
Total	823,690	1,200,849	3,765,600	1,935,266	682,290

(a) See letterpress immediately preceding table. (b) Comprises free homestead farms and reserves. (c) Comprises perpetual leases, leases of reserves and leases of town and suburban lots.

GOVERNMENT LAND SETTLEMENT SCHEMES

Although, generally, the method of land alienation and settlement in the agricultural areas of Western Australia has been by independent applications by individual settlers for conditional purchase leases, there has also been a series of government land settlement schemes. The more important of these are the Soldiers' Settlement Scheme following the 1914-18 war, the Group Settlement Scheme introduced in 1921, the War Service Land Settlement Scheme which was initiated in 1945 and other lesser schemes for the settlement of civilians. An outline of each of these schemes appears in Chapter VII of the *Western Australian Year Book*, No. 7—1968 and earlier issues.

Chapter VII—continued

Part 2—Water Supply and Sewerage

The principal water supply and sewerage systems of Western Australia are under the control of two State authorities, the Metropolitan Water Supply, Sewerage, and Drainage Board and the Public Works Department.

The Metropolitan Water Supply, Sewerage, and Drainage Board is constituted under the provisions of the *Metropolitan Water Supply, Sewerage, and Drainage Act, 1909-1972*. It came into being on 1 July 1964 and replaced the former Metropolitan Water Supply, Sewerage and Drainage Department as the authority responsible, subject to the Minister, for the general administration of the Act. The Board consists of seven members appointed by the Governor. One member is appointed Chairman on the nomination of the Governor and the remaining members comprise the General Manager of the Board; a qualified engineer; the Under-Treasurer or an officer of the Treasury nominated by him; and three representatives of ratepayers of municipal districts within the Metropolitan Water, Sewerage and Drainage Area. This area of approximately 3,430 square kilometres constitutes the territory under the Board's administration. It embraces Perth and the metropolitan area southward to Warnbro Beach and Serpentine, northward to Gingin Brook and Herne Hill and eastward to Swan View-Sawyers Valley, Kalamunda, Bickley and Carmel, and also incorporates approximately 2,100 square kilometres of the water catchment areas of the Canning, Serpentine, North Dandalup and South Dandalup Rivers and streams of the Darling Range.

The Public Works Department controls the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply as well as 130 local water supplies. It also provides water for irrigation purposes in the four South-West Irrigation Districts (Waroona, Harvey, Collie River and Preston Valley), the Camballin Irrigation District and the Ord Irrigation District. In addition, a small pilot scheme supplying twenty-six growers in the Carnarvon Non-Artesian Area is being operated.

Four independent town schemes are controlled by local Water Boards in country areas under the *Water Boards Act, 1904-1973* and some local authorities supply water under the provisions of the *Local Government Act, 1960-1973*. Private companies engaged in mining in the North-West of the State provide their own water supply for mining operations, power supply and domestic use. Individual water supplies serve railways, timber mill towns, isolated mines, pastoral properties, stock routes and agricultural areas, mainly from dams, tanks, wells and bores.

The principal water storages in Western Australia are shown in the next table. Supplies for the metropolitan area and environs are drawn almost entirely from Serpentine Reservoir and Serpentine Pipehead Reservoir, Canning Reservoir, Wungong Brook Diversion Weir, Churchman Brook Reservoir, Victoria Reservoir, North Dandalup Pipehead Dam and South Dandalup Reservoir. Mundaring Weir, which is the source for the Goldfields and Agricultural Water Supply, is linked to Kalgoorlie by pipeline and serves the more populous parts of the Eastern Goldfields as well as certain towns and farming areas north and south of the main pipeline. As occasion arises Mundaring Weir supplies to or draws from the Metropolitan Water Supply. Stirling Dam, with a supplementary catchment at Harvey Weir, serves part of the irrigation area of the South-West. Drakes Brook Dam, Samson Brook Dam, Logue Brook Dam, Waroona Dam and Glen Mervyn Dam are also used for this purpose. Wellington Dam, on the Collie River, has been enlarged to meet not only the needs of the southern parts of the irrigation area but also of towns included in the Great Southern Towns Water Supply.

The storage capacities of the principal dams and reservoirs at 30 June 1973 were as shown below.

DAMS AND RESERVOIRS—STORAGE CAPACITY (a)
(⁰⁰⁰ cubic metres)

Dam or reservoir	Storage capacity	Dam or reservoir	Storage capacity
Canning Reservoir	93,420	Samson Brook Dam	9,187
Churchman Brook Reservoir	2,182	Serpentine Pipehead Reservoir	3,864
Drakes Brook Dam	2,291	Serpentine Reservoir	177,300
Fitzroy Dam	4,659	17-Mile Dam (e)	5,496
Glen Mervyn Dam	1,495	South Dandalup Reservoir	208,211
Harvey Weir	(b) 8,023	Stirling Dam	57,061
Kununurra Diversion Dam (c)	97,473	Victoria Reservoir	859
Logue Brook Dam	24,357	Waroon Dam	14,956
Mundaring Weir	77,127	Wellington Dam	185,431
North Dandalup Pipehead Dam	(d)	Wungong Brook Diversion Weir	(f)
Ord River Dam (Lake Argyle)	5,696,000		

(a) At 30 June 1973. (b) Excludes flashboard storage. (c) Bandicoot Bar Dam or Ord River Diversion Dam.
(d) Capacity 1,800 cubic metres. (e) On Uralla Creek, an anabranch of the Fitzroy River. (f) Diversion weir only.

METROPOLITAN WATER SUPPLY

The sources of the metropolitan water supply are Serpentine Reservoir and Serpentine Pipehead Reservoir, Canning Reservoir, Wungong Brook Diversion Weir, Churchman Brook Reservoir, Victoria Reservoir, North Dandalup Pipehead Dam, and South Dandalup Reservoir. The supply from these sources is supplemented as necessary from a pipeline link with Mundaring Weir and from a number of artesian bores. The amount of bore water used, however, is now low in proportion to total metropolitan consumption, being rarely more than 10 per cent during a severe summer and usually considerably less.

METROPOLITAN WATER SUPPLY—QUANTITIES OF WATER DRAWN (a)
(⁰⁰⁰ cubic metres)

Source	1968-69	1969-70	1970-71	1971-72	1972-73
Canning Reservoir	42,349	51,790	43,723	40,000	38,946
Churchman Brook Reservoir	3,813	2,390	4,661	3,132	1,741
Mundaring Weir	1,511	1,064	1,431	1,588	2,337
North Dandalup Pipehead Dam (b) .....	.....	.....	2,436	13,298	11,270
Serpentine Reservoir (c)	66,148	67,464	71,665	69,297	81,206
Victoria Reservoir	1,149	*1,842	3,791	2,045	2,604
Wungong Brook Diversion Weir	8,329	6,523	10,114	10,425	9,008
Metropolitan bores	5,582	*16,145	12,018	16,178	17,696
Total	128,881	*147,218	149,839	155,963	164,807

(a) Including supplies to railways and shipping. (b) Commenced operating December 1970. (c) Includes water drawn from Serpentine Pipehead Reservoir. * Revised.

Victoria Reservoir, which was completed in 1891 with a capacity of 859,000 cubic metres, was the first of the existing water conservation projects to be completed in the Darling Range. In 1921 a 104,500 cubic metre reservoir, which is no longer used for water supply, was constructed at Bickley Brook to replace a pipehead dam, and in 1928 one with a capacity of 2,182,000 cubic metres was completed at Churchman Brook. During the same period pipehead dams were built across the upper course of the Canning River and its tributary, Wungong Brook, preliminary to the construction of Canning Reservoir, which was begun in 1933 and completed in 1940. Canning Reservoir has a storage capacity of 93,420,000 cubic metres retained by a concrete wall 66 metres high and 468 metres long at the crest. Serpentine Pipehead Reservoir was completed in 1957 and Serpentine Reservoir, commenced in 1957, was completed in 1961. Serpentine Reservoir is constructed of rolled earth fill and the embankment rises 52 metres above the stream bed, the length at the crest being 424 metres. Its capacity, which is slightly less than that of Wellington Dam on the Collie River, is 177,300,000 cubic metres. Supplies to the metropolitan system are augmented by the North Dandalup Pipehead Dam which is the first stage of the Dandalup Rivers Scheme and was completed in December 1970. The major storage component of the scheme, the 208,211,000 cubic metre capacity South Dandalup Dam, was completed in late 1973 and at June 30, 1973 a total of 22,878,000 cubic metres was held.

Water from the storages in the Darling Range is conveyed to the metropolitan area by large trunk mains and then distributed by feeder, distribution and reticulation mains, either directly from the trunk mains or from large service reservoirs at Mount Yokine, Mount Eliza, Bold Park, Mount Hawthorn, Richmond, Melville, Buckland Hill, Hamilton Hill, Thompson Lake and Greenmount and from summit tanks and water towers situated at high points throughout the area supplied. To meet the peak demand during the summer months, supplies from these sources are supplemented from a system of artesian bores which can provide a daily maximum of 95,500 cubic metres. On 30 June 1973, the number of consumer services was 222,393. The previous table shows the quantities of water which were drawn from the various sources during each of the five years ended 30 June 1969 to 1973.

COUNTRY WATER SUPPLIES

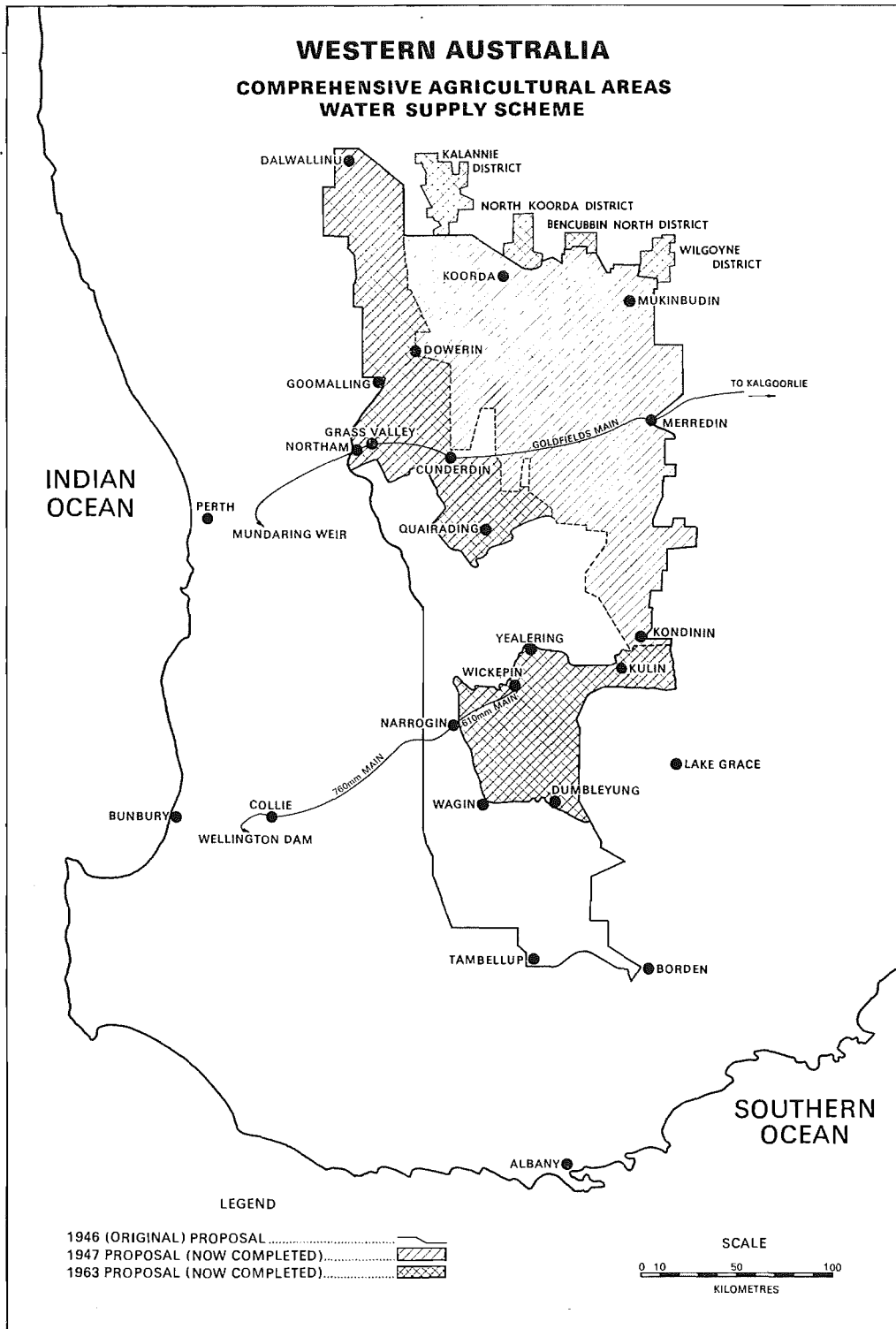
Supplies controlled by the Public Works Department

Since 1947 enlargement and extension of the Goldfields and Agricultural Water Supply and the development of the Great Southern Towns Water Supply have been carried out mainly in accordance with a project known as the Modified Comprehensive Scheme. A proposal for a comprehensive water supply scheme was first submitted by the State Government to the Commonwealth Government in January 1946 when applying for financial assistance in its construction. The initial plan was intended to supply water to towns and farms in an area of 4.7 million hectares in mixed farming (cereal and sheep) districts of Western Australia, as well as to increase the supply to the Eastern Goldfields. A committee appointed by the Commonwealth Government to consider the State's submission reported that certain areas within the scheme had a higher priority than others. As a result, the project was greatly reduced in scope and a modified scheme, to embrace 1.7 million hectares, was agreed to by both Governments and adopted in October 1947. The extent of the scheme as originally proposed, and as modified, is shown on the map on page 315. A description of the boundary of the modified scheme is contained in a schedule to the *Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act, 1947* (State), which gave parliamentary approval of the undertaking. Commonwealth financial aid was provided by means of the *Western Australia Grant (Water Supply) Act 1948* (Commonwealth) and later amendments, which authorised reimbursement to the State of one-half of its expenditure on the scheme, up to a maximum grant of \$10 million.

The modified scheme was completed in 1961, the total expenditure amounting to \$20.6 million. A request made by the State Government in 1960 for a grant equal to half the cost of extending the scheme virtually to the boundary as first proposed in 1946 was rejected by the Commonwealth Government. Following this rejection the State Government embarked on a necessarily limited programme financed from its own loan moneys, the policy being to restrict extensions to supply certain towns within the original area and farm lands adjacent to pipelines. A further request was made by the State Government in 1963 for a grant of \$10.5 million payable over a seven-year period and representing one-half of the estimated cost of proposed extensions which would increase by 1.5 million hectares the area served by the scheme. The Commonwealth agreed to provide assistance in the form of an interest-bearing loan up to a maximum of \$10.5 million, advances to be made during a period of eight years commencing with the financial year 1965-66. Legislative authority for the loan is given by the *Western Australia (South-west Region Water Supplies) Agreement Act 1965* (Commonwealth). The map on page 315 shows the additional areas reticulated under the 1963 proposals.

Goldfields and Agricultural Water Supply

The original purpose of this undertaking, which was formerly known as the Goldfields Water Supply was to supply water for the Coolgardie and the Kalgoorlie-Boulder areas. To provide conservation, the Helena River was dammed near Mundaring, and on completion of the reservoir in 1902 it had a capacity of 21 million cubic metres. The increasing demand for water in the area served made it necessary to augment supplies. This was achieved by raising the wall 9.8 metres to a height of 40.2 metres and when the



work was completed in 1951 the enlarged capacity of the reservoir was 68.9 million cubic metres. The capacity has since been further increased to 77.1 million cubic metres by the erection of adjustable steel crest gates 1.2 metres in height. In 1972 the Lower Helena Pipehead Dam, some eight kilometres below Mundaring Weir, was brought into operation, water being pumped from this source to augment the supply from this reservoir. The main pipeline between Mundaring and Kalgoorlie is 554 kilometres long. It is for the most part 760 millimetre diameter steel but has 1,220 millimetre, 1,065 millimetre and 915 millimetre pipe in the western portion with some duplication of the 760 and 915 millimetre pipe. The pipeline is equipped with seventeen pump stations. The maximum pumping capacity from Mundaring Weir is 123,000 cubic metres per day. The total capacity of all receiving, regulating, standby and service tanks (including four standby reservoirs at Kalgoorlie with a combined capacity of 336,000 cubic metres) is 1.2 million cubic metres.

At 30 June 1973 the Goldfields and Agricultural Water Supply was serving 112 towns and water was being reticulated to farms in an area of 2.3 million hectares. The number of services, length of water mains and consumption for the years 1967-68 to 1971-72 are given in the following table.

GOLDFIELDS AND AGRICULTURAL WATER SUPPLY

Year	Number of services (a)	Length of water mains (kilometres) (a)	Consumption (a) ('000 cubic metres)						Total
			Domestic	Commercial	Industrial (including railways)	Mining	Farms and market gardens	Other	
1967-68	26,305	6,738	5,137	644	1,142	2,634	3,133	1,297	13,988
1968-69	24,973	6,754	5,180	870	1,176	2,819	3,335	1,338	14,718
1969-70	25,742	6,869	5,725	1,119	1,080	3,651	3,635	1,448	16,660
1970-71	26,046	7,303	5,563	737	958	3,693	3,761	1,295	16,008
1971-72	26,670	7,329	6,009	1,533	863	3,389	4,173	1,693	17,660

(a) Figures include amounts consumed from local supplies at Waddouring-Barbalin-Knungajin, Bruce Rock, Narembeen and Kondinin.

Extensions to country towns and agricultural areas have been made from several points along the main pipeline. Norseman is connected by an extension southward from Coolgardie. A branch from this main supplies the nickel mining town of Kambalda. From a point west of Merredin water is taken northward to supplement local schemes at Waddouring-Barbalin-Knungajin. Other extensions north and south of the main pipeline provide water for a number of towns and surrounding districts, including Toodyay, Goomalling, York, Beverley and Bullfinch. A pipeline southward from Merredin to serve Bruce Rock, Narembeen, Kondinin and surrounding districts and Kulin and surrounding districts is linked to an extension south from Doodlakine and taken westward to supply Corrigin. A main south from Cunderdin serves Quairading and the intermediate farmlands. Areas north-west of Burracoppin are served by an extension northward from a point east of Merredin, and districts north of Kellerberrin by a pipeline connecting Kellerberrin to the Waddouring-Barbalin-Knungajin system already mentioned. Water is taken northward from Cunderdin through Minnivale to a point near Kokardine. Extensions westward, eastward and northward from this pipeline serve a number of towns and localities, including Dowerin, Wyalkatchem, Yelbeni, Koorda, Kalannie, Pithara, Ballidu, Dalwallinu and Wongan Hills, and surrounding farm lands. An extension northward from the main pipeline serves Koolyanobbing, where iron ore is mined.

Great Southern Towns Water Supply

The Great Southern Towns Water Supply serves towns on the Great Southern Railway from Brookton to Katanning, as well as a number of other towns. Water is drawn from Wellington Dam which also supplies the Collie River Irrigation District. Work on raising the wall of the Dam to give it a holding capacity of some 185 million cubic metres was completed in 1960. Water is taken through Narrogin to Wickepin by means of a main pipeline 171 kilometres long. In addition to the pumping installation at the

dam site, there are stations at a point forty-five kilometres east of the dam and at Narrogin. From Narrogin, pipelines extend sixty-four kilometres northward to Brookton and ninety-five kilometres southward to Katanning. A branch westward from Katanning serves the town of Kojonup and a second branch extends south-eastward through Broomehill to Gnowangerup. From Wickiepin the pipeline extends southward to Dumbleyung, eastward to Kulin and northward to Bullaring through Yealering. A pipeline eighteen kilometres long supplies water to a power station constructed for the State Electricity Commission at Muja, south-eastward from Collicie.

At 30 June 1972 the Great Southern Towns Water Supply was serving thirty towns and an area comprising 607,000 hectares of farmland. Details of the number of services, length of water mains and consumption for the years 1967-68 to 1971-72 are given in the following table.

GREAT SOUTHERN TOWNS WATER SUPPLY

Year	Number of services	Length of water mains (kilometres)	Consumption ('000 cubic metres)					Total
			Domestic	Commercial	Industrial (including railways)	Farms and market gardens	Other (a)	
1967-68	8,507	853	1,639	207	814	157	313	3,131
1968-69	8,891	863	1,780	221	655	192	396	3,245
1969-70	9,584	1,110	2,090	237	1,325	270	483	4,405
1970-71	10,006	1,246	2,017	228	797	401	382	3,825
1971-72	10,202	1,559	2,147	221	732	495	482	4,077

(a) Excludes mining, for which no services were provided by the Public Works Department.

Supplies to other Country Towns

One hundred and thirty towns and localities are supplied with water from stream flow, dams, tanks, wells and bores, the schemes being administered under the provisions of the *Country Areas Water Supply Act, 1947-1973*. The following table gives, for these local schemes, the number of services, length of water mains and consumption for the years 1967-68 to 1971-72.

PUBLIC WORKS DEPARTMENT: LOCAL SCHEMES

Year	Number of services	Length of water mains (kilometres)	Consumption ('000 cubic metres)					Total
			Domestic	Commercial	Industrial (including railways)	Mining and shipping	Farms and market gardens	
1967-68	25,372	1,379	3,988	1,152	955	79	71	7,340
1968-69	27,481	1,521	6,886	1,655	1,328	67	257	11,804
1969-70	30,182	1,630	8,860	2,108	1,603	117	268	14,728
1970-71	32,642	1,811	10,166	2,412	2,122	225	216	17,075
1971-72	33,677	1,862	13,264	3,360	2,063	155	130	21,440

The Public Works Department is also responsible for the provision and maintenance of tanks and wells as a source of cartage water for a number of small communities in gold-mining and agricultural areas.

Other Country Water Supplies

As well as the schemes controlled by the Public Works Department, there are four local Water Boards operating under the *Water Boards Act, 1904-1973* which also draw supplies from stream flow, dams, tanks, wells and bores. In addition, some local authorities exercise powers under the *Local Government Act, 1960-1973* to supply water within their boundaries. There are still, however, a large number of individual farms and pastoral stations which are not connected to public schemes and are therefore obliged

to provide their own supplies. The Forests Department and sawmilling companies operate schemes to supply water to their mill towns. In a number of ports and mining towns in the North-West of the State, mining companies are responsible for the provision of their own water supplies, and while the principal source of supply is underground reserves, desalination of sea water is also being used.

Railways of the Commonwealth and State Governments make independent provision for supplies of water for their own purposes, although considerable additional quantities are consumed by the railways from other sources, such as those controlled by the Public Works Department and the Metropolitan Water Supply, Sewerage, and Drainage Board.

UNDERGROUND WATER

Considerable use is made of groundwater by individual farmers, pastoralists, market gardeners, etc. and it is estimated that over 50,000 bores are in use in the State. The quality of the water varies from place to place and much of it is too saline for irrigation or even stock. Both pressure waters and non-pressure waters are used to supply or augment the supplies of numerous towns, including such major centres as Perth, Albany, Bunbury, Busselton, Carnarvon, Dampier, Esperance, Exmouth, Geraldton and Port Hedland, and the list is growing.

Industries also are using groundwater in substantial quantities, particularly in the processing of titanium, iron, and alumina. Recent mineral discoveries in several areas have given rise to very large demands for water, the search for which has had to be intensified. Marked advances in the knowledge of aquifers and quality of water in the main sedimentary basins have been made as a result of extensive geological surveys and exploratory drilling by the Geological Survey (a branch of the Department of Mines), several oil companies, and developmental drilling by the Public Works Department, and the Metropolitan Water Supply, Sewerage, and Drainage Board.

The Public Works Department and the Metropolitan Water Supply, Sewerage, and Drainage Board are responsible for all developmental works. The Geological Survey is responsible for all exploratory works, as well as for investigating and assessing the State's groundwater resources, and advising local government authorities, private industry and individuals on groundwater problems.

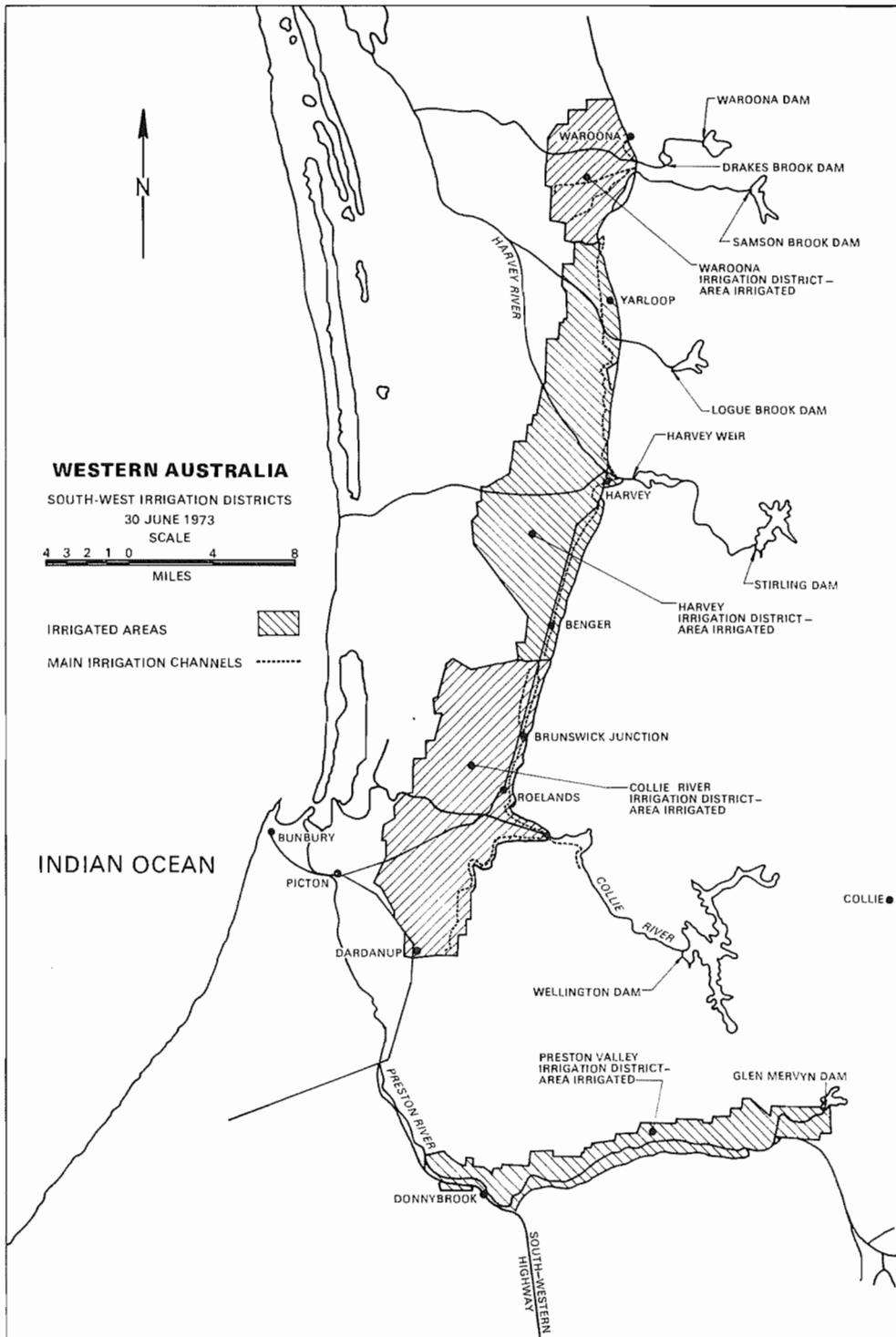
SOUTH-WEST IRRIGATION SCHEMES

Irrigation schemes have been established by the State Government on the coastal plain south of Perth in the Waroona, Harvey, Collie River and Preston Valley Irrigation Districts between Waroona and Donnybrook, the water being channelled from dams in the adjacent Darling Range.

Specialist advice on irrigation farming methods is available through the Department of Agriculture and the properties are watered on a rotational plan, according to the 'Zone', or section of the District, within which the farms are situated.

The Harvey Irrigation District, opened in 1916, was the first large-scale project. Harvey Weir, with a capacity of 2·36 million cubic metres on completion, was constructed as the source of water supply and the service initially provided was for 1,215 hectares of land for citrus growing.

The success of dairying and stock raising and to a lesser extent vegetable growing, which have replaced citrus culture, has led to gradual but substantial extensions of the South-West irrigation area. The damming of Drakes Brook in 1931 and Samson Brook in 1941 provided a storage capacity of 10·37 million cubic metres which, by alterations to Samson Brook Dam in 1960, has been increased to 11·48 million cubic metres and is used for the irrigation of 1,427 rated hectares in the Waroona Irrigation District. In 1966 a third storage to serve the Waroona District, known as Waroona Dam, was completed on Drakes Brook about five kilometres up-stream from the existing Drakes Brook Dam. Its capacity is 14·96 million cubic metres and storage, was available for the 1966-67 irrigation season. In 1931 the capacity of Harvey Weir was enlarged to 10·34 million cubic metres (including flashboard storage) and in 1948 Stirling Dam, with an original capacity



of 54.83 million cubic metres (increased to 57.06 million cubic metres by alterations in 1958), was completed further up-stream on the Harvey River. These works enabled the Harvey Irrigation District to be extended northward to link with the Waroona District. Logue Brook Dam, with a capacity of 24.36 million cubic metres, was completed in 1963 and provides additional supplies for the Harvey Irrigation District, the rated area of which is 5,577 hectares.

During 1969 construction of the Glen Mervyn Dam on a tributary of the Preston River near Mumballup was completed. Water from this dam is made available each summer for controlled release into the Preston River when the natural stream flow is insufficient for the irrigation of orchards downstream from Donnybrook.

Concurrently with developments in the Harvey and Waroona Irrigation Districts, action was taken to conserve water for the Collie River Irrigation District and Wellington Dam on the Collie River was completed in 1933. In view of its importance, not only to irrigation projects but also to the Great Southern Towns Water Supply, the wall of this reservoir has been raised and when work was completed in 1960 its capacity of 36.37 million cubic metres was increased to 185.44 million cubic metres. It serves an area of 4,751 rated hectares in the Collie River Irrigation District, which extends from Brunswick Junction to Dardanup.

Details of irrigation in each district in the years 1971-72 and 1972-73 are given in the following table.

IRRIGATION: SOUTH-WEST SCHEMES

Particulars	Irrigation district								Total	
	Waroona		Harvey		Collie River		Preston Valley			
	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
Area watered—										
Pasture hectares	1,815	1,672	6,108	6,163	5,963	6,203	|	|	13,886	14,037
Fodder crops "	108	60	108	81	187	142			402	282
Potatoes ..... "	.....	.....	.....	8	29	30	(a)	(a)	29	38
Other vegetables "	98	97	24	30	13	12			135	140
Orchards ..... "	.....	.....	61	79	24	25	|	|	85	104
Total "	2,020	1,829	6,301	6,361	6,216	6,411	(a)	(a)	14,537	14,601
Hectare waterings (b) 	12,385	14,153	41,676	53,279	37,477	50,834	1,439	1,333	92,977	119,599
Average number of waterings(c) 	6.1	7.7	6.6	8.4	6.0	7.9	n.a.	n.a.	6.4	8.2
Total water gauged at entry to district '000 cu m	19,957	20,539	65,600	74,465	67,419	75,511	1,141	900	154,117	171,415
Dam capacity (d) "	26,436	26,436	90,308	90,308	185,435	185,435	1,496	1,496	303,674	303,674
Length of channels km	74	74	248	248	203	203	....	....	525	525

n.a. denotes 'not applicable'.

(a) Not available. (b) Area watered multiplied by number of waterings. Figures shown represent the sum of hectare waterings for individual holdings in each district. (c) Total hectare waterings divided by total area watered. (d) Excludes flashboard storage.

NORTHERN IRRIGATION SCHEMES

Although not yet comparable in size with the South-West undertakings, the irrigation areas at Carnarvon and on the Ord and Fitzroy Rivers in the northern portion of the State are of increasing significance.

Carnarvon. During the past forty years a centre of tropical agriculture has been developed at Carnarvon, near the mouth of the Gascoyne River. It produces over half of the bananas consumed in Western Australia and is a major supplier to the Perth market of out-of-season vegetables. This centre was, in 1972-73, the largest producer in the State of french and runner beans, water melons, tomatoes, pumpkins, cucumbers and capsicums and the second largest producer of rock melons. Carnarvon also exports beans, cucumbers and pumpkins to the Eastern States.

Agricultural development has been made possible only by irrigation, as the rainfall is extremely variable and averages little more than 230 millimetres per annum. Each holding

has its own irrigation plant and, wherever possible, the pumping unit is installed on a bank of the Gascoyne River. Usually the river bed is exposed, as surface flow does not occur regularly each year. Concrete-lined wells have been sunk into the river sands and the water obtained is pumped either to storage tanks or direct to the plantation feeder channels, from which it is distributed among the plants by furrows. Because of the limitations of supply from the river sands, the State Government has instituted controls over the quantity of water pumped by growers, has commenced to develop up-river sources and is delivering supplementary water by pipeline to sixty-five plantations. A tropical research station is maintained at Carnarvon by the Department of Agriculture. To the early activities of this research station may be credited much of the success of the Carnarvon plantations, notably in the field of plant selection and pest control, and experimental work is being continued.

Ord River. The Ord River in the Kimberley Division traverses a tropical area which receives monsoonal rains of irregular incidence and quantity, varying from an annual mean of 510 millimetres in the south to 760 millimetres in the north. Investigations at the Kimberley Research Station, established in 1945 and operated by the Department of Agriculture in conjunction with the Commonwealth Scientific and Industrial Research Organization, have shown that the climate and soil conditions are favourable for the cultivation of sorghum, sugar-cane, rice, cotton, safflower and various oil seeds. Following these investigations the State Government, with Commonwealth financial assistance, embarked on a project to provide water supplies for irrigation in the area.

The Ord Irrigation Project provides for the development of 72,000 hectares of land agriculturally and topographically suitable for irrigation. The project comprises four stages: the first was the construction of a diversion dam to supply water for an area of 12,140 hectares and the second, the building of a main storage dam with a capacity of 5,700 million cubic metres. The other stages are the progressive development of the whole 72,000 hectares and the construction of a hydro-electric power station.

The diversion dam, situated at Bandicoot Bar about 105 kilometres by road south-east of Wyndham and forty-eight kilometres downstream from where the Ord River Dam now stands, was officially opened on 20 July 1963. The capacity of the diversion dam is 97.6 million cubic metres and irrigation from the dam commenced in April 1963. It has been renamed the Kununurra Diversion Dam and its storage is now named Lake Kununurra.

There are thirty farms included in the first stage of the project and each has an approximate area of 270 hectares. Cotton is the principal crop, although small areas of other crops are being grown. Fattening of cattle on irrigated fodder crops shows promise as another alternative.

An area of 970 hectares, originally a pilot farm developed by a private company to conduct farm-scale trials under an agreement with the State Government, later became the company's property under the agreement. Large quantities of grain sorghum have been grown on this property by the company which is concentrating on cattle fattening in feed lots.

The diversion dam was recognised by the Commonwealth Government in August 1959 as an approved project within the meaning of the *Western Australia Grant (Northern Development) Act 1958-1959* (Commonwealth). This legislation provided for payment by the Commonwealth to the State Government of a non-repayable grant of \$10 million for development of the part of the State north of 20°S. latitude. Of this grant \$8.2 million was spent on the diversion dam. In February 1963 a further approach was made to the Commonwealth requesting an amount of \$3.3 million for the completion of channels and drains required to develop the whole of the 12,140 hectares included in the first stage of the project. The request was approved in August 1963 and moneys made available by way of grant in terms of the *Western Australia (Northern Development) Agreement Act 1963*.

In November 1967, the Commonwealth Government approved the plan for the second phase of the Ord River Irrigation Scheme and agreed to provide financial assistance to the State for the works involved. Agreement as to the terms and conditions for financing the second phase of the scheme was announced in March 1968. In terms of the *Western*

Australia Agreement (Ord River Irrigation) Act 1968 the Commonwealth agreed to provide financial assistance to the State in an amount equivalent to expenditure on the works, up to a maximum of \$48.18 million. The assistance took the form of a non-repayable grant for the construction of the main Ord dam (\$21.60 million) and an interest-bearing loan for the associated irrigation and drainage facilities.

The Ord River Dam was constructed over three dry seasons, 1969 to 1971, and was officially opened on 30 June 1972. A pump station and irrigation supply facilities to bring 2,020 hectares of new irrigation farmland into production on Packsaddle Plain was completed in December 1970. An extension of the scheme to cover 770 hectares on Ivanhoe Plain is scheduled for completion in June 1974.

Fitzroy River. On the Liveringa flood plain, grain and fodder sorghums are being produced at Camballin, 105 kilometres south-east of Derby. Irrigation water from the Fitzroy River is diverted by means of a weir with a capacity of 4.7 million cubic metres constructed across the river. It is diverted through Uralla Creek, an anabranch, for twenty-seven kilometres to another dam with a storage of 5.5 million cubic metres constructed on Uralla Creek. Later it will be necessary to construct a storage dam on the upper reaches of the Fitzroy River for the large-scale developments envisaged for this area.

During 1971-72 the company concerned with the development used 9.2 million cubic metres of water for the irrigation of sorghum and fodder crops for the production of quality beef. In 1972-73, 9.1 million cubic metres of water were used on 2,193 hectares of feed crop, mainly grain sorghum. The company has constructed a feed lot to handle 5,000 head of cattle at one time.

Details of irrigation in the Ord and Camballin Irrigation Districts for the years 1971-72 and 1972-73 are given in the following table.

IRRIGATION: ORD AND CAMBALLIN DISTRICTS

Particulars	Irrigation district				Total	
	Ord		Camballin			
	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
Area watered hectares	5,368	6,063	1,445	2,193	6,812	8,256
Hectare waterings (a)	32,723	36,511	(b)	8,335	(c)	44,846
Average number of waterings (d)	6.1	6.0	(b)	3.8	(c)	5.4
Total water gauged at entry						
to district '000 cu m	70,783	77,720	9,233	9,138	80,016	86,858
Dam capacity	(e) 5,791,719	(e) 5,791,719	(f) 11,638	(f) 11,638	(e)(f) 5,803,357	(e)(f) 5,803,357
Length of channels	111	111	32	32	143	143

(a) Area watered multiplied by number of waterings. Figures shown represent the sum of hectare waterings for individual holdings in each district. (b) Not available. (c) See footnote (b). (d) Total hectare waterings divided by total area watered. (e) Ord Dam completed. (f) Includes 1.5 million cubic metres of natural storage.

Dunham River. In addition to the government irrigation undertakings mentioned above, a private scheme is now in course of development in the Dunham River valley south of its confluence with the Ord River. An agreement between the Government of Western Australia and Goddard of Australia Pty. Ltd., subsequently ratified by the *Irrigation (Dunham River) Agreement Act, 1968*, authorises the company to construct a dam on Arthur Creek, a tributary of the Dunham River, to irrigate the pilot area. The company, in terms of the agreement, is required to subdivide the pilot area into not more than ten holdings each containing an area of approximately 400 hectares, of which some 240 hectares will be irrigated. By early 1972 construction of the Arthur Creek Dam had been completed and the irrigation system was serving seven 400-hectare farm units which are being progressively developed.

If the company demonstrates to the Government that it is both practical and economically sound to develop the pilot area for agricultural purposes by way of closer settlement in holdings of about 400 hectares, the company will be authorised to proceed with phase 2 of the plan—the construction of a dam on the Dunham River and a suitable water distribution system. The additional area involved in the second phase of the scheme amounts to approximately 13,750 hectares.

WATER RESOURCES INVESTIGATION AND MEASUREMENT

Work on the investigation and measurement of the water resources of Western Australia, both surface and underground, has been accelerated in recent years partly due to the activities of the Australian Water Resources Council, which was established by joint action of the Commonwealth and State Governments in 1962. The Council comprises Commonwealth and State Ministers primarily responsible for water resources.

The primary objective of the Council is the provision of a comprehensive assessment on a continuing basis of Australia's water resources, and the extension of measurement and research so as to provide a sound basis for the planning of future development.

In terms of its main objective, the Council in 1964 recommended, and the Commonwealth and State Governments agreed, that there should be an accelerated programme of establishment of stream gauging stations and investigation of underground water. Financial assistance to the States was rendered by the Commonwealth under the *States Grants (Water Resources) Act 1964*, subject to certain qualifying expenditure by each State. Under various States Grants (Water Resources Measurement) Acts, financial assistance to the States has continued and has been extended to 30 June 1976.

The total expenditure by the Western Australian Government on water resources measurement, including grants received from the Commonwealth, is given in the following table. It will be seen that, in general, expenditure has increased steadily each year since 1964-65 to a peak of \$1,759,895 in 1972-73.

EXPENDITURE ON WATER RESOURCES
MEASUREMENT (a)
(\$)

Year	Surface water	Underground water
1964-65	258,200	430,000
1965-66	311,270	514,620
1966-67	351,700	384,000
1967-68	364,299	569,664
1968-69	442,681	527,927
1969-70	498,519	776,011
1970-71	521,695	753,471
1971-72	655,494	812,841
1972-73	669,701	1,090,194

(a) Including Commonwealth grants.

Surface Water

To enable rivers and streams to be utilised efficiently, the quantity and quality of water flowing in many rivers and streams throughout Western Australia are being measured. These vary from comparatively small streams, to relatively large rivers such as the Ord River in the Kimberley.

The number of stream-gauging stations in operation is increasing each year and at 30 June 1973 totalled 199, compared with 193 at 30 June 1972. All stations are under the control of the Public Works Department.

The distribution of the gauging stations in the various drainage divisions is as follows:

South-West Coast Division	117
(Esperance to the Hill River)	
Indian Ocean Division	38
(Arrowsmith River to the De Grey River)	
Timor Sea Division	36
(Broome to the Ord River)	
Western Plateau Division	8
Total	199

Underground Water

To locate and measure the quantity and quality of underground water available to supply the ever-growing needs of town water supplies, industries, farmers, pastoralists, etc. a considerable amount of investigation, including drilling, is in progress in Western Australia. The work is being carried out by the Department of Mines, the Public Works Department, and the Metropolitan Water Supply, Sewerage, and Drainage Board, with the Department of Mines assuming the major responsibility for hydro-geological work.

Underground water exploration projects in course during 1972-73 included major investigations of shallow aquifers north of Perth, which may provide large quantities of water to augment Perth's water supply, and broad scale investigations in the East Murchison to indicate water for possible mining developments. Other investigations designed to locate underground water to provide or augment the water supplies for Albany, Calingiri, Capel, Cervantes, Eaton, Esperance, Green Head and various towns in the Shire of West Pilbara were also carried out during the year.

SEWERAGE SCHEMES

Metropolitan Sewerage

There are three major sewerage systems and seven smaller systems administered by the Metropolitan Water Supply, Sewerage, and Drainage Board within the metropolitan area.

Sewage from the major systems either gravitates or is pumped through the pipe systems to treatment works at Subiaco, Swanbourne and Woodman Point. After treatment the effluent is discharged into the Indian Ocean, some distance from the coast under a substantial depth of water.

The seven smaller systems are served by treatment plants at Canning Vale, Gosnells, Westfield, Beenyup, Kwinana, Eden Hill and Kelmscott, the treated effluent being disposed of in sandy soil in the vicinity of the plant sites.

The following table shows the number of services, population served and the length of sewer mains under the control of the Metropolitan Water Supply, Sewerage, and Drainage Board at 30 June for each of the years 1969 to 1973.

METROPOLITAN SEWERAGE SYSTEMS

At 30 June—		Services	Population served	Length of sewers
		number	persons	kilometres
1969	....	74,018	281,651	1,498
1970	....	76,638	296,000	1,590
1971	....	81,940	313,059	1,828
1972	....	87,318	334,608	1,991
1973	....	93,402	353,700	2,158

Country Towns Sewerage

A number of towns outside the metropolitan area have sewerage schemes which were constructed pursuant to the *Country Towns Sewerage Act, 1948-1973*. In addition, a further eight schemes have been provided by local government authorities or as private development in mining areas by certain mining companies.

Some expansion in local authority construction can be anticipated as a result of a State subsidy scheme designed to assist local government authorities in developing this service. The first grants to local authorities under the scheme were made available in 1971-72.

The following table shows the number of towns seweraged, the area seweraged and the number of services controlled by the Public Works Department at 30 June for each of the years 1968 to 1972. Details of the individual towns serviced are given in the succeeding table.

COUNTRY SEWERAGE SYSTEMS

At 30 June—	Number of towns sewered	Area sewered	Length of sewers	Services
	number	hectares	kilometres	number
1968	21	1,831	278	7,201
1969	22	1,976	299	7,967
1970	25	2,175	336	8,846
1971	25	2,508	369	10,178
1972	26	2,866	377	11,141

COUNTRY SEWERAGE SYSTEMS: AREA SEWERED, SEWERS AND NUMBER OF SERVICES

Town	At 30 June 1971			At 30 June 1972		
	Area sewered	Length of sewers	Services	Area sewered	Length of sewers	Services
	hectares	kilometres	number	hectares	kilometres	number
Albany	456	74	2,306	493	71	2,393
Bunbury	106	21	555	129	19	640
Collie	254	42	989	265	42	1,012
Corrigin	55	8	127	55	6	145
Denmark	4	3	21	4	2	21
Exmouth	82	11	289	82	11	388
Geraldton	28	6	270	28	3	270
Gnowangerup	61	6	103	64	6	122
Karratha	157	14	477	178	14	545
Katanning	123	16	303	132	14	324
Kellerberrin	28	5	63	41	5	68
Kojonup	38	6	118	38	6	139
Kununurra	57	5	73	61	5	83
Meckering	25	3	40	25	3	40
Merredin	62	10	229	87	11	257
Mount Barker	23	3	53	34	5	54
Narrogin	172	21	609	193	24	654
Northam	405	56	2,229	405	58	2,265
Pingelly	54	6	64	54	6	67
Pinjarra (a)	(a)	(a)	(a)	105	13	202
Port Hedland	70	11	396	72	11	433
South Hedland	56	10	110	129	13	229
Three Springs	48	5	142	48	3	148
Wagin	64	10	293	64	10	295
Wundowie	38	6	195	38	6	217
Wyalkatchem	40	6	124	40	6	130
Total	2,506	364	10,178	2,864	373	11,141

(a) Commenced after 30 June 1971.

CHAPTER VIII—PRODUCTION

Due to the recent growth in importance of mining in Western Australia, the traditional distinction between primary production (*i.e.* agriculture, forestry, hunting, fishing and mining) and secondary production (*i.e.* manufacturing) places primary production a long way ahead of secondary production in relative importance to the State's economy. However, the contribution of mining is now such that it might be more realistically regarded as a major segment of production in its own right, contributing almost the same in absolute terms as manufacturing and somewhat more than the total of the remaining primary industries. In addition, a significant part of the recent growth in manufacturing can be attributed to the effects of mining development.

Farming, which is the major primary activity after mining, has been carried on from the earliest years of settlement but its development was originally restricted by inadequate transport, shortage of labour and a limited local consumption. These difficulties were partly overcome by the introduction of convict labour during the period from 1850 to 1868, but the colony was still dependent on the importation of many items of foodstuffs when the position was aggravated by a great influx of people attracted by the discovery of gold in the Kimberley in 1885 and by the spectacular finds in the 1890s at Coolgardie and Kalgoorlie and at other places on the eastern goldfields. Between 1890 and 1905 the population increased from 48,502 to 250,138 and, despite an increase in the area under crop from 28,000 hectares to 147,600 hectares during these years, agricultural production remained insufficient to meet local demands.

A decline in gold mining which began after 1903 caused a growing interest in farming as an alternative pursuit and by 1911 the area under crop had increased to more than 404,000 hectares, of which 248,000 were sown to wheat for grain. Since that time, although there have been some fluctuations in agricultural activity, the area under crop has risen steadily, to reach a peak of over 3.9 million hectares in 1969-70. In 1972-73 the area under crop was just under 3.9 million hectares, of which 2.4 million hectares were sown to wheat for grain.

Circumstances similar to those applying to agriculture stimulated the growth of the pastoral industry and large cattle and sheep stations were established on land leased from the Crown, mainly in the northern and north-western areas and in parts of the eastern goldfields. The number of cattle in the State increased from 131,000 to 825,000 and of sheep from 2,525,000 to 5,159,000 between 1890 and 1910, when nearly three-fifths of the sheep were in the pastoral areas and little more than two-fifths in the agricultural areas as defined on page 354. With the development of mixed wheat and sheep farming the total number of sheep has risen and in 1973 was 30.9 million, but only about 10 per cent are now in the pastoral areas. Of the total of 2,182,411 cattle in the State in 1973 over 30 per cent were in the Kimberley Division where cattle are raised almost exclusively for meat production.

The contribution of mining to the Western Australian economy is substantial and in 1971-72 the major minerals in terms of value of production were iron ore, petroleum, nickel, gold, construction materials, mineral sands, bauxite, coal, salt and tin. Production of minerals is expected to increase still further as deposits of petroleum, nickel, iron ore and bauxite in particular are developed.

Dairying, with an average annual milk production over the last five years of more than 254 million litres, is a significant factor in primary industry.

The demand for jarrah and karri hardwoods has long been a feature of the State's economy. Indiscriminate cutting in earlier years and disregard of the need for preservation and regeneration threatened the survival of the timber industry. However, governmental controls over forestry operations and a policy of reforestation introduced in 1918 have proved to be effective and the industry is now established on a continuing basis.

The overseas demand for rock lobsters, which developed in post-war years, has given continued impetus to the fishing industry. The total value of the catch of fish, crustaceans and molluscs in 1971-72 was \$26,781,000, to which rock lobsters contributed \$22,184,000. Interest in whaling was evident in the first years of colonisation. The only station now operating is at Frenchman Bay near Albany from which sperm whaling is conducted.

Secondary production in Western Australia has not attained the same relative importance in the State's economy as it has in New South Wales and Victoria where the major concentrations of population are located. However, in more recent years the State's mining development has contributed significantly to manufacturing development. Apart from the direct impact of the establishment of mineral processing plants such as a blast furnace, iron-ore pelletising plants and alumina and nickel refineries, existing manufacturing activities have received a boost from the demand for their products arising out of the heavy capital investment in large mining projects. Further large-scale expansion appears most likely to be based on the processing of mineral products and the related industries, which can establish markets beyond the small local market.

GEOGRAPHICAL DISTRIBUTION OF INDUSTRY

The following brief survey of production in the Statistical Divisions of the State should be read in conjunction with the maps preceding the *Index*. Reference should also be made to the accompanying *Note on Statistical Divisions*.

The Perth Division (5,368 square kilometres), which has a population of 739,200 (30 June 1973) or over two-thirds of the State total, is the principal centre of manufacturing activity with establishments engaged in most types of secondary industry. Many of the larger industrial establishments located in the Perth Division are concentrated in the Kwinana area where development has been encouraged by the dredging of a deep-water channel and the construction of harbour facilities to meet the requirements of large-scale projects.

Farm activity for the Division is confined mainly to the production of citrus, pome and stone fruits, eggs, poultry, vegetables and whole milk. Production is principally for consumption within the metropolitan area but small quantities are exported. In addition, most of the State's viticultural industry is carried on in this region. Table grapes, currants, raisins and sultanas are produced for the local market and for export, and wine-making grapes are grown for use in local wineries. A well-established fishing industry operates from the port of Fremantle, the main catch being rock lobsters. Bauxite is mined at Jarrahdale for treatment at an alumina refinery at Kwinana.

The South-West Division (28,570 square kilometres) is the main dairying area of the State and produces a large proportion of the total output of whole milk and of butter, cheese and condensery products. Pig raising is carried on both separately and as an ancillary activity to dairying. The rearing of cattle for meat production is also of major importance. Apples, pears, stone fruits, potatoes and other vegetables are grown extensively. Vegetable crops (principally potatoes) are grown in the Manjimup area. Timber is one of the main products, being milled over a wide area, and coal, bauxite, mineral sands, and tin are the principal minerals produced. Commercial fishing is centred on Mandurah, Bunbury and Busselton. The factories of the Division include sawmills, butter, cheese and milk-processing plants, meat works, a superphosphate works, a large chemical factory producing titanium oxide pigments and two major electricity generating stations. A major bauxite-alumina complex operates in the Pinjarra area.

The Southern Agricultural, Central Agricultural and Northern Agricultural Divisions, which together cover 218,484 square kilometres, comprise the principal cereal-growing districts and produce the bulk of the State's wheat, oats and barley crops. The development of clover ley farming over a wide area has led to a remarkable increase in the number of sheep carried on farms in these Divisions and the total, 24.4 million, comprises 79 per cent of the State's sheep population. There has been a corresponding rise in wool production which now represents almost 80 per cent of the State's clip. The raising of cattle, principally for meat production, has also increased in importance and the number

kept for all purposes is now 624,399 or more than 28 per cent of the State total. Tomatoes are grown in the area around Geraldton and citrus fruits in the Chittering area. Cattle for dairying and meat production, apple and pear growing and potato growing are important in the districts around Denmark, Albany and Mount Barker while large quantities of peas for processing are produced around Mount Barker and Gnowangerup. Other crops of increasing importance are lupins and rapeseed. Whaling and fishing are carried on from Albany, on the south coast, and the important rock lobster-fishing industry on the lower west coast is based on Houtman Abrolhos, Geraldton, Dongara, Jurien Bay, Cervantes and Lancelin Island. Lead has been mined near Northampton for many years and the mining of iron ore, which is being shipped to Japan from Geraldton, commenced at Koolanooka in 1966. Natural gas, discovered near Dongara, was first distributed to domestic and industrial users in the Perth metropolitan area on 1 December 1971.

Factories in these Divisions include flour-mills, superphosphate works, butter factories, sawmills, a woollen mill, a charcoal iron and wood-distillation plant, a fish cannery and a meat works.

The North-West and Pilbara Divisions (647,541 square kilometres) have 1·78 million sheep, representing 6 per cent of the State total, and 95·1 thousand cattle. Tropical agriculture has been developed on the Gascoyne River at Carnarvon where bananas, beans and other vegetables are grown. An important prawn-fishing industry has been established in the Division, the principal areas being Carnarvon, Exmouth Gulf and Point Samson. Commercial fishermen operate also from Shark Bay. Solar salt projects have been established at Port Hedland, Dampier and also at Lake MacLeod, about forty miles north of Carnarvon. Iron ore, now the principal mineral in the State, is mined on a large scale in the Pilbara, and plants producing iron ore pellets from iron ore fines commenced operations at Dampier in 1968 and at Cape Lambert in late 1972. Crude oil is produced at Barrow Island and then shipped elsewhere in Australia for refining.

The Kimberley Division (421,451 square kilometres), with over 663 thousand cattle, or 30 per cent of the State total, and meat works at Wyndham, Derby and Broome, is an important source of beef for export from Western Australia to overseas markets. Broome is also the centre of pearl-shell fishing. Culture pearls are being successfully produced at Kuri Bay, Cygnet Bay and at Port Smith. Iron ore is mined at Cockatoo and Koolan Islands in Yampi Sound. Reference is made on pages 321-2 to agricultural developments at Kununurra on the Ord River and Camballin on the Fitzroy River.

The Eastern Goldfields and Central Divisions, covering a total area of 1,206,215 square kilometres, contain the principal goldfields of the State and almost all the gold produced in Western Australia comes from this area. Other minerals and ores produced in these Divisions include nickel, gypsum and silver. Although mining is the main industry, these Divisions contribute also to pastoral output, the area containing 10 per cent of the sheep and 8 per cent of the cattle in the State. Cereals are grown in the south-western portion of the Eastern Goldfields Division, which produced 188,000 tonnes of wheat, oats and barley in 1972-73.

Part 1—Primary Production

LAND UTILISATION ON RURAL HOLDINGS

In 1972-73 there were 21,128 rural holdings in the State, comprising 114 million hectares of land or just over 45 per cent of the total area of Western Australia.

The total area of rural holdings consisted of 13·8 million hectares of cleared land and 100·2 million hectares uncleared. Of the cleared land, 3·9 million hectares were used for crop, 6·8 million hectares were under established pastures and 0·4 million hectares were in fallow. The balance of the cleared area, 2·8 million hectares, comprised land which was used for grazing or was resting during the season and newly cleared land. The uncleared land is mainly pastoral leases held by sheep and cattle stations.

Land development in the post-war period was stimulated by generally favourable prices for agricultural and pastoral commodities. Special concessions to primary producers under the provisions of the taxation legislation also contributed to the increased capital investment in primary industry. This development, undertaken principally by established farmers and by the War Service Land Settlement Board, was aided by the introduction of modern mechanical methods of land clearing. As a result, the area of cleared land on rural holdings more than doubled, from 5.9 million hectares in 1946-47 to 13.8 million hectares in 1972-73. In the same period land used for crops increased from 1.4 million hectares to almost 3.9 million hectares, with a peak of over 3.9 million hectares in 1969-70, and the area under established pastures from 0.8 million to 6.8 million hectares. The area in fallow, which was 0.8 million hectares in 1946-47, has decreased and in 1972-73 it was 0.4 million hectares.

Details of land utilisation in the five years to 1972-73 are given in the next table.

LAND UTILISATION

Season	Active rural holdings (number)	Land use during the season (hectares)							Total area of holdings (hectares)
		Used for crop (a)	Under sown pastures	Lucerne (all purposes)	In fallow	Newly cleared, prepared for next season	Other cleared land	Uncleared land	
1968-69	23,004	3,840,272	6,216,991	(b)	739,794	525,130	2,340,779	98,100,633	111,763,598
1969-70	22,937	3,915,599	6,666,012	(b)	547,623	400,554	2,627,565	99,485,995	113,643,348
1970-71	22,592	3,831,429	6,982,551	(b)	592,102	(c) 2,872,554		100,290,801	114,569,436
1971-72	21,997	3,751,233	6,809,377	14,819	352,555	(c) 103,543,309			114,471,293
1972-73	21,128	3,855,196	6,769,099	16,460	356,320	(c) 2,772,909		100,191,116	113,961,100

(a) Excludes pasture hay.

(b) Included in land used for crops.

(c) Separate figures not available.

The following table shows a classification of rural holdings according to size of holding for 1972-73. For the State as a whole the largest group of holdings is in the size range 1 to 19 hectares and the 3,295 holdings concerned represent 16 per cent of the total number of holdings in the State.

The next largest group is holdings in the range 1,000 to 1,499 hectares and the 2,894 holdings in this category account for 14 per cent of the total.

CLASSIFICATION OF RURAL HOLDINGS ACCORDING TO SIZE OF HOLDING: 1972-73

Area of holdings	In agricultural areas (a)		In pastoral areas (a)		Whole State	
	Number of holdings	Area	Number of holdings	Area	Number of holdings	Area
hectares		hectares		hectares		hectares
1 to 19	3,158	19,322	137	1,089	3,295	20,411
20 to 39	596	17,099	22	534	618	17,633
40 to 74	980	53,514	6	278	986	53,792
75 to 99	557	48,038	1	91	558	48,129
100 to 124	551	61,621	2	224	553	61,845
125 to 149	460	62,802	....	....	460	62,802
150 to 199	757	131,674	1	151	758	131,825
200 to 249	686	152,846	1	202	687	153,048
250 to 299	504	138,243	10	2,707	514	140,950
300 to 399	851	296,141	3	1,027	854	297,168
400 to 499	843	373,308	3	1,344	846	374,652
500 to 749	1,640	1,021,248	5	2,685	1,645	1,023,933
750 to 999	1,936	1,676,296	6	5,335	1,942	1,681,631
1,000 to 1,499	2,887	3,562,275	7	8,424	2,894	3,570,699
1,500 to 1,999	1,726	2,972,341	1	1,592	1,727	2,973,933
2,000 to 2,999	1,292	3,093,998	1	2,021	1,293	3,096,019
3,000 to 3,999	529	1,812,587	....	....	529	1,812,587
4,000 to 4,999	202	889,612	2	8,917	204	898,529
5,000 to 9,999	215	1,366,884	4	26,658	219	1,393,542
10,000 and over	75	6,020,042	471	90,127,930	546	96,147,972
Total	20,445	23,769,891	683	90,191,209	21,128	113,961,100

(a) See page 354.

In the next table details of rural land utilisation according to Statistical Division are given for 1972-73. The greatest number of active rural holdings was in the Central Agricultural Division which also had the largest area under crop.

LAND UTILISATION IN EACH STATISTICAL DIVISION: 1972-73

Statistical Division	Active rural holdings (number)	Land use during the season (hectares)					Total area of holdings (hectares)
		Used for crops (a)	Under sown pastures (b)	Lucerne (all purposes)	In fallow	Other	
Perth	3,355	9,214	83,445	216	825	68,772	162,471
South-West	4,080	34,866	668,389	1,042	3,120	346,019	1,053,436
Southern Agricultural	4,397	648,402	2,023,668	2,932	69,180	1,459,312	4,203,494
Central Agricultural	4,548	1,750,040	1,950,558	125	103,707	2,431,856	6,236,286
Northern Agricultural	3,046	1,082,981	1,485,343	509	101,365	3,543,878	6,214,076
Eastern Goldfields	1,114	320,223	545,071	10,335	77,067	17,946,836	18,899,532
Central	156	1,104	163	5	283	26,238,402	26,239,957
North-West and Pilbara	301	728	.....	.....	80	27,133,898	27,134,706
Kimberley	131	7,637	12,462	1,296	693	23,795,054	23,817,142
Total	21,128	3,855,196	6,769,099	16,460	356,320	102,964,025	113,961,100

(a) Excludes areas of sown pastures and of lucerne cut for hay or harvested for seed. (b) Previously described as 'Under established pasture'.

MACHINERY

The following table shows the principal items of machinery on rural holdings at 31 March in each of the years from 1969 to 1973. Items marked not available are, in general, collected only triennially.

MACHINERY ON RURAL HOLDINGS

Type	At 31 March—				
	1969	1970	1971	1972	1973
Rotary hoes—					
Self-contained power unit	1,743	1,671	1,518	1,728	1,756
Tractor-mounted and trailing types	1,578	1,622	1,616	2,149	2,159
Seeding and fertilising machines—					
Grain drills—					
Combine type	13,954	14,168	14,043	13,687	13,847
Other types	3,661	3,499	3,406	3,404	3,145
Fertiliser distributors and broadcasters—					
Rotary	9,189	(a)	9,315	9,367	9,378
Direct drop	672	(a)	668	722	730
Total	9,861	10,017	9,983	10,089	10,108
Harvesting machines—					
Grain and seed harvesters (b)—					
Tractor drawn	9,709	9,317	9,018	8,556	8,026
Self-propelled	1,524	1,592	1,727	1,906	2,079
Total	11,233	10,909	10,745	10,462	10,105
Agricultural mowers—					
Reciprocating (cutter bar) types—					
Power driven (incl. power take-off)	(a)	(a)	6,776	(a)	(a)
Ground driven	(a)	(a)	275	(a)	(a)
Rotary types (including slashers and toppers)	(a)	(a)	2,792	(a)	(a)
Hay rakes—Side-delivery	(a)	(a)	5,208	(a)	(a)
Other hay and agricultural rakes (including buck, dump and root)	(a)	(a)	3,293	(a)	(a)
Pick-up balers	3,905	4,113	4,329	4,570	4,674
Forage harvesters	614	644	626	688	670
Potato diggers	(a)	(a)	476	(a)	(a)
Tractors—					
Wheeled	31,388	32,120	31,917	31,809	31,970
Crawler	3,617	3,750	3,741	3,631	3,549
Total	35,005	35,870	35,658	35,440	35,519
Miscellaneous machines—					
Hammer mills (including roughage mills)	(a)	(a)	2,524	(a)	(a)
Milking machine units	9,036	9,144	(a)	8,401	8,529
Shearing machine stands	25,355	26,385	(a)	25,399	(a)

(a) Not available. (b) Includes headers and strippers; excludes reapers, binders and specialised clover seed harvesters.

CLASSIFICATION OF RURAL HOLDINGS

Some of the information from the 1970-71 Agricultural Census was classified by size of principal characteristics (area of holdings, area of established pasture, area of selected crops and numbers of livestock). In addition, all holdings were classified according to type of activity. Definitions and an outline of methods used have been published by the Commonwealth Statistician, Canberra in a series of bulletins, *Classification of Rural Holdings by Size and Type of Activity*, 1968-69.

Selected size classification tables for Western Australia are published elsewhere in this Part and the type of activity classifications for the State are shown below and on pages 332-3.

HOLDINGS CLASSIFIED ACCORDING TO TYPE OF ACTIVITY
NUMBER AND AREA USED FOR VARIOUS PURPOSES—SEASON 1970-71

Type of activity	Number of holdings	Total area of holdings	Area used for—				
			Fruit	Crops (excluding fruit)	Fallow	Established pasture	Balance of holding
		hectares	hectares	hectares	hectares	hectares	hectares
Sheep—Cereal grain	6,575	11,005,012	2	2,967,413	337,746	3,465,869	4,233,981
Sheep	5,146	66,284,078	1,387	418,192	77,521	2,649,932	63,137,053
Cereal grain	1,006	1,454,057	.....	378,827	119,083	92,338	863,810
Cattle (meat production)	1,560	32,055,972	190	17,379	7,538	358,759	31,672,107
Cattle (milk production)	1,129	236,205	99	5,054	894	162,525	67,639
Vineyards	197	4,679	1,800	51	177	982	1,686
Fruit (other than vine)	846	50,354	5,977	1,089	619	23,103	19,578
Vegetables—Potatoes	76	6,916	25	512	96	3,348	2,954
Other and mixed	904	39,579	597	4,825	777	17,783	15,833
Poultry	290	22,235	114	693	298	2,256	18,873
Pigs	164	40,083	30	2,932	527	7,139	29,455
Other	122	31,378	43	5,302	3,008	6,246	16,780
Multi-purpose	159	61,460	525	7,981	726	29,769	22,462
Total, classified holdings	18,174	111,292,008	10,789	3,810,250	549,010	6,820,049	100,102,211
Unclassified holdings—							
Sub-commercial	3,205	2,087,583	1,428	6,953	7,411	91,146	1,980,664
Unused, special, etc.	1,213	1,189,845	158	2,346	35,681	71,356	1,080,303
Total, all rural holdings	22,592	114,569,436	12,375	3,819,549	592,102	6,982,551	103,163,178

HOLDINGS WITH PIG HERDS, CLASSIFIED ACCORDING TO TYPE OF ACTIVITY
AND SIZE OF HERD—SEASON 1970-71

Type of activity	Size of pig herd (numbers)									Total
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-99	100 and over	
Sheep—Cereal grain	85	113	121	112	229	222	157	632	501	2,172
Sheep	105	70	64	62	90	81	81	151	94	798
Cereal grain	4	8	6	10	12	7	11	41	38	137
Cattle (meat production)	14	6	11	7	10	11	7	9	3	78
Cattle (milk production)	23	19	18	8	22	30	17	60	29	226
Vineyards	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Fruit (other than vine)	13	3	2	.....	1	2	2	3	.....	26
Vegetables—Potatoes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other and mixed	16	4	1	2	.....	.....	1	3	1	28
Poultry	2	3	1	3	2	2	.....	2	7	22
Pigs	.....	.....	.....	.....	.....	2	5	39	118	164
Other	2	.....	1	1	.....	.....	.....	.....	.....	4
Multi-purpose	4	1	3	3	9	6	10	17	24	77
Total, classified holdings	268	227	228	208	375	363	292	957	815	3,733
Unclassified holdings—										
Sub-commercial	42	35	34	13	27	15	15	4	.....	185
Unused, special, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, all rural holdings	310	262	262	221	402	378	307	961	815	3,918

In the first table on page 331, the number and area of rural holdings used for various purposes are shown. Of the 22,592 rural holdings of all types in the State, sheep and cereal grain was the principal activity of 6,575 or 29 per cent of the total. The greatest area was occupied by holdings with sheep as the principal activity, which accounted for 58 per cent of the total area of all holdings, followed by cattle for meat production with 28 per cent.

The second table on page 331 shows, for holdings with pig herds, the size of the herd for each type of activity. Pig raising was associated principally with the activity sheep and cereal grain.

Of the 8,921 holdings growing wheat for grain, 6,413 or over 72 per cent were combined with sheep as the principal activity, as shown in the following table.

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO
TYPE OF ACTIVITY AND AREA—SEASON 1970-71

Type of activity	Area of wheat for grain (acres)									Total
	1-99	100-199	200-299	300-399	400-499	500-699	700-999	1,000-1,999	2,000 and over	
Sheep—Cereal grain	171	425	662	721	635	1,138	1,078	1,256	327	6,413
Sheep	683	372	160	92	30	26	10	3	...	1,376
Cereal grain	15	58	85	121	128	209	148	161	58	983
Cattle (meat production)	10	2	5	...	3	...	1	...	...	21
Cattle (milk production)	1	...	...	...	...	...	...	...	...	1
Vineyards ....	...	...	...	...	...	...	...	...	...	...
Fruit (other than vine)	1	...	...	...	...	...	...	...	...	1
Vegetables—Potatoes ....	...	...	...	...	...	...	...	...	...	...
Other and mixed	3	1	...	...	...	1	...	...	...	5
Poultry	16	2	...	2	...	...	1	1	...	22
Pigs	2	...	1	1	1	...	...	...	...	5
Other	12	4	2	3	4	3	2	1	...	31
Multi-purpose ....	...	...	...	...	...	...	...	...	...	...
Total, classified holdings	914	864	915	940	801	1,377	1,240	1,422	385	8,858
Unclassified holdings—	...	...	...	...	...	...	...	...	...	...
Sub-commercial	53	10	...	...	...	...	...	...	...	63
Unused, special, etc. ....	...	...	...	...	...	...	...	...	...	...
Total, all rural holdings	967	874	915	940	801	1,377	1,240	1,422	385	8,921

In the following table, holdings with sheep flocks have been classified according to the size of flock for each type of activity.

HOLDINGS WITH SHEEP FLOCKS, CLASSIFIED ACCORDING TO TYPE OF ACTIVITY
AND SIZE OF FLOCK—SEASON 1970-71

Type of activity	Size of sheep flock (numbers)									Total
	1-299	300-499	500-699	700-999	1,000-1,399	1,400-1,999	2,000-2,999	3,000-4,999	5,000 and over	
Sheep—Cereal grain	57	117	251	555	938	1,300	1,629	1,220	441	6,508
Sheep	78	130	253	382	495	626	990	1,180	974	5,108
Cereal grain	87	47	35	28	20	11	7	2	...	237
Cattle (meat production)	356	53	24	15	17	7	2	2	1	477
Cattle (milk production)	208	8	4	3	1	...	...	...	...	224
Vineyards	17	...	...	...	...	...	...	...	...	17
Fruit (other than vine)	94	23	10	4	2	1	...	...	...	134
Vegetables—Potatoes	4	1	...	2	1	...	...	...	...	8
Other and mixed	40	6	6	1	...	2	3	...	...	59
Poultry	24	3	1	2	1	1	1	...	...	32
Pigs	38	6	3	1	1	3	1	...	...	53
Other	4	...	...	...	2	...	...	...	...	6
Multi-purpose	49	17	12	9	2	6	2	2	...	99
Total, classified holdings	1,056	411	599	1,002	1,480	1,957	2,635	2,406	1,416	12,962
Unclassified holdings—	...	...	...	...	...	...	...	...	...	...
Sub-commercial	765	134	4	...	...	...	...	...	...	903
Unused, special, etc. ....	...	...	...	...	...	...	...	...	...	...
Total, all rural holdings	1,821	545	603	1,002	1,480	1,957	2,635	2,406	1,416	13,865

Holdings running cattle for milk production are classified in the following table according to size of herd for each type of activity.

Of the 2,108 rural holdings on which cattle for milk production were held, 547 or over 25 per cent ran herds of less than five cattle. Where cattle for milk production was the principal activity on the holding, there were more herds of 150 or more cattle than any other size classification.

HOLDINGS WITH CATTLE (MILK PRODUCTION) HERDS (a)
ACCORDING TO TYPE OF ACTIVITY AND SIZE OF HERD—SEASON 1970-71

Type of activity	Size of cattle herd (milk production) (numbers)									Total
	1-4	5-9	10-19	20-39	40-59	60-79	80-99	100-149	150 and over	
Sheep—Cereal grain	176	21	4	5	....	1	....	1	....	208
Sheep	141	17	16	17	12	10	4	6	4	227
Cereal grain	5	1	....	....	....	....	....	....	....	6
Cattle (meat production)	65	3	11	17	24	17	16	9	6	168
Cattle (milk production) ....	....	....	10	45	131	166	154	278	345	1,129
Vineyards ....	....	....	....	....	....	....	....	....	....	....
Fruit (other than vine)	17	2	4	9	7	3	3	....	....	45
Vegetables—Potatoes	4	....	....	1	....	....	....	....	....	5
Other and mixed	15	6	1	6	9	7	3	4	1	52
Poultry	2	1	1	1	....	1	....	....	....	6
Pigs	10	....	1	3	1	....	1	3	1	20
Other	1	....	....	....	....	....	....	....	....	1
Multi-purpose	5	1	3	3	11	9	7	9	7	55
Total, classified holdings	441	52	51	107	195	214	188	310	364	1,922
Unclassified holdings—										
Sub-commercial	106	18	18	42	2	....	....	....	....	186
Unused, special, etc. ....	....	....	....	....	....	....	....	....	....	....
Total, all rural holdings	547	70	69	149	197	214	188	310	364	2,108

(a) Excludes holdings with no cattle for milk production other than house cows.

Of the 9,502 holdings running cattle for meat production, 4,937 were associated with either sheep or sheep and cereal grain as the principal activity. A further 819 holdings were associated with the running of cattle for milk production. Herds of 1,000 or more cattle for meat production were found on 137 holdings.

HOLDINGS WITH CATTLE (MEAT PRODUCTION) HERDS
ACCORDING TO TYPE OF ACTIVITY AND SIZE OF HERD—SEASON 1970-71

Type of activity	Size of cattle herd (meat production) (numbers)									Total
	1-9	10-19	20-29	30-49	50-99	100-199	200-299	300-999	1,000 and over	
Sheep—Cereal grain	619	307	225	310	337	177	38	28	....	2,041
Sheep	324	240	207	429	685	554	231	196	30	2,896
Cereal grain	29	10	2	19	18	9	5	1	....	93
Cattle (meat production) ....	....	....	....	17	399	510	217	310	107	1,560
Cattle (milk production)	226	104	97	109	152	84	29	18	....	819
Vineyards	8	4	1	1	6	1	....	....	....	21
Fruit (other than vine)	53	32	29	44	72	32	7	4	....	273
Vegetables—Potatoes	4	6	3	10	6	6	....	....	....	41
Other and mixed	33	16	18	34	55	36	13	2	....	207
Poultry	18	11	2	7	3	3	....	....	....	44
Pigs	23	16	4	9	14	1	....	....	....	67
Other	2	2	1	....	1	4	2	2	....	14
Multi-purpose	8	3	7	15	44	37	11	7	....	132
Total, classified holdings	1,347	751	596	1,004	1,792	1,454	559	568	137	8,208
Unclassified holdings—										
Sub-commercial	445	275	191	299	80	4	....	....	....	1,294
Unused, special, etc. ....	....	....	....	....	....	....	....	....	....	....
Total, all rural holdings	1,792	1,026	787	1,303	1,872	1,458	559	568	137	9,502

VALUE OF PRODUCTION

For primary production the *gross value* is based on the wholesale price realised 'at the principal market'. Where primary products are consumed at the place of production or where they become raw material for secondary industry within the State, these points of consumption are taken as the 'principal market'. *Net value* represents the return to the producer after the cost of all goods consumed in the process of production and the costs of marketing the product have been deducted from the gross value. It is consequently the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

Net values of production of the various primary industries excluding mining during the five years ended 1972-73 are given in the following table. A useful comparison of the relative importance of the individual primary industries is provided by the five-yearly averages quoted, as they tend to lessen the effect on the statistics of unusual seasonal or other conditions occurring in particular years. However, in making such comparisons particular account should be taken of price fluctuations for major commodities in each industry over the period (such as wool in 'Pastoral') and, from 1969-70, the implementation of the Wheat Delivery Quotas Plan. An outline of the Plan is given on page 341.

NET VALUE OF RECORDED PRIMARY PRODUCTION
(Excluding Mining)

Industry	1968-69	1969-70	1970-71	1971-72	1972-73	Average of five years
VALUE (\$'000)						
Agriculture	*136,566	*84,327	*177,640	145,641	134,350	135,705
Pastoral	168,728	132,610	104,437	156,314	275,052	167,428
Dairying	12,909	(a)9,850	10,004	9,924	16,022	11,742
Poultry farming	4,111	4,673	5,707	6,736	6,362	5,518
Bee keeping	503	614	277	692	1,015	620
Hunting	813	770	592	640	1,908	945
Forestry	12,591	12,795	14,845	13,288	13,184	13,341
Fishing, pearling and whaling	22,239	17,989	23,655	29,089	26,283	23,851
Total	*358,460	*263,629	*337,158	362,324	474,175	359,150

PROPORTION OF TOTAL (PER CENT)

Agriculture	38.10	31.99	52.69	40.20	28.33	37.79
Pastoral	47.07	50.30	30.98	43.14	58.01	46.62
Dairying	3.60	3.74	2.97	2.74	3.38	3.27
Poultry farming	1.15	1.77	1.69	1.86	1.34	1.54
Bee keeping	0.14	0.23	0.08	0.19	0.21	0.17
Hunting	0.23	0.29	0.18	0.18	0.40	0.26
Forestry	3.51	4.85	4.40	3.67	2.78	3.71
Fishing, pearling and whaling	6.20	6.82	7.02	8.03	5.54	6.64
Total	100.00	100.00	100.00	100.00	100.00	100.00

(a) Decrease due principally to change in sources and method of valuing fodder consumed.

* Revised.

The following table shows the gross and net values of production of the various primary industries in 1972-73. The '*local value*' which is quoted is the value at the source of production and is obtained by deducting marketing costs from the gross value. Marketing costs comprise freight, cost of containers, commission, and other charges incurred in marketing. Gross values provide a reliable measure of the value of production of any particular item or industry but net value of primary production should be used when comparing or combining values for primary industries with those for secondary industry.

PRIMARY INDUSTRIES—VALUE OF PRODUCTION: 1972-73
(Excluding Mining)
(\$'000)

Industry	GROSS VALUE (based on principal market prices)	Marketing costs	LOCAL VALUE (as at source of production)	Cost of goods consumed in process of production	NET VALUE
Agriculture	203,417	31,724	171,693	37,343	134,350
Pastoral	321,111	19,606	301,505	26,453	275,052
Dairying	34,022	1,979	32,043	16,022	16,022
Poultry farming	15,069	916	14,153	7,791	6,362
Bee keeping	1,045	30	1,015	(a)	1,015
Hunting	2,132	224	1,908	(a)	1,908
Forestry	14,607	1,423	13,184	(a)	13,184
Fishing, pearling and whaling	28,056	158	27,899	1,616	26,283
Total	619,460	56,059	563,400	89,225	474,175

(a) Not available.

Gross values of the principal items are shown in the next table for each of the years 1968-69 to 1972-73.

PRIMARY PRODUCTION—GROSS VALUES OF PRINCIPAL ITEMS
(Excluding Mining)
(\$'000)

Industry and commodity	1968-69	1969-70	1970-71	1971-72	1972-73
Agriculture—					
Wheat	151,306	*90,961	*153,227	115,934	109,399
Oats	12,978	5,910	18,100	10,256	5,793
Barley	8,619	8,874	34,194	39,223	29,523
Hay (all kinds)	10,132	13,457	15,396	13,294	19,948
Pasture seed—					
Subterranean clover	2,662	1,599	751	832	1,859
Barrel medic	341	65	111	81	60
Cotton	*1,892	*1,681	*1,587	2,310	1,332
Vegetables—					
Potatoes	5,613	5,390	6,299	5,923	6,272
Tomatoes	1,885	2,024	1,915	1,975	2,387
Beans, French and runner (a)	1,033	859	801	856	709
Lettuce	696	831	773	808	998
Cauliflowers	968	829	1,061	1,083	919
Fruit, orchard—					
Apples	8,289	8,072	9,167	7,772	8,214
Bananas	1,415	2,143	367	1,433	1,747
Oranges	1,200	1,344	1,272	931	984
Pears	721	849	823	726	1,031
Plums and prunes	531	662	702	501	759
Vine fruits	1,336	1,282	1,457	1,238	1,246
Nursery products (b)	1,138	1,312	1,467	1,836	2,274
Pastoral—					
Wool (shorn and dead) (c)	157,788	120,552	91,937	134,764	223,559
Livestock slaughtered (d)	51,662	55,601	52,530	60,212	91,188
Dairying—					
Whole milk (e)	16,697	16,255	17,766	17,862	18,482
Livestock slaughtered (f)	8,368	9,687	9,041	10,365	15,540
Poultry farming—					
Eggs (g)	5,785	6,253	6,724	7,990	7,251
Poultry slaughtered	6,412	6,702	7,795	8,189	7,818
Bee keeping (h)	542	659	296	729	1,045
Hunting	1,211	1,098	834	838	2,132
Forestry	13,465	13,632	16,174	14,660	14,607
Fishing—					
Prawns	1,802	2,697	2,986	2,969	4,106
Rock lobsters	17,801	12,115	18,040	22,184	17,923
Scale fish	922	1,019	1,200	1,437	1,676

(a) Includes beans for processing. (b) Value of seedlings, cut flowers, bulbs, trees, etc. produced. (c) The value of fellmongered wool and wool exported on skins is included in the value of livestock slaughtered which has been computed from prices of livestock 'on hoof' and therefore includes a value for wool on skins. (d) Comprises cattle, sheep and lambs. (e) Includes Australian Government subsidy. (f) Comprises calves and pigs. (g) Excludes value of non-commercial production. (h) Excludes value of production of bee keepers with less than five hives. * Revised.

SUMMARY OF AUSTRALIAN STATISTICS

The following table contains a selection of the principal statistics of primary production in each of the Australian States for 1971-72. The figures shown for Australia include those for the Northern Territory and the Australian Capital Territory except where indicated otherwise.

PRINCIPAL STATISTICS OF PRIMARY PRODUCTION—AUSTRALIA: 1971-72

Particulars	Unit	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia (a)
Rural holdings—								
Number .....	.....	74,960	67,714	43,389	29,095	21,997	9,807	247,568
Area	'000 ha	69,001	15,884	154,404	65,146	114,471	2,607	499,535
Principal crops—								
Wheat for grain—								
Area	'000 ha	2,426	1,040	556	1,069	2,042	5	(b) 7,138
Production	'000 tonnes	2,410	1,797	722	1,407	2,165	8	(b) 8,510
Oats for grain—								
Area	'000 ha	261	329	21	169	454	6	1,241
Production	'000 tonnes	221	449	18	166	414	7	1,275
Barley for grain—								
Area	'000 ha	373	296	159	784	911	13	2,535
Production	'000 tonnes	346	395	249	1,047	1,000	28	3,065
Hay—all types—								
Area	'000 ha	290	636	57	245	177	81	1,489
Production	'000 tonnes	1,178	3,001	340	981	653	450	6,613
Pasture seed	tonne	1,806	2,356	1,441	4,044	5,244	(c) 432	15,413
Cotton—								
Area	'000 ha	29	.....	(d) 7	.....	3	.....	40
Production	tonne	100,823	.....	(e) 6,637	.....	12,564	.....	118,731
Onions—								
Area	hectare	832	1,070	1,293	899	139	185	(b) 4,419
Production	tonne	22	17	25	26	5	5	(b) 100
Potatoes—								
Area	hectare	9,987	13,986	7,365	2,775	2,684	3,593	(b) 40,401
Production	tonne	171,800	306,707	132,618	71,741	68,420	70,369	(b) 821,799
Other vegetables—								
Area	hectare	19,011	18,341	18,599	7,647	3,187	6,188	(f) 72,196
Apples—								
Number of trees	'000 trees	1,638	1,699	1,311	671	1,248	2,540	9,111
Production	'000 bush	3,640	3,629	1,839	1,177	2,750	5,873	18,913
Pears—								
Number of trees	'000 trees	261	1,644	127	208	88	165	2,494
Production	'000 bush	687	7,144	192	486	222	296	9,026
Oranges—								
Number of trees	'000 trees	2,638	658	260	1,493	370	.....	5,420
Production	'000 bush	5,700	1,678	926	4,681	376	.....	13,362
Vineyards—								
Area	hectare	12,654	20,794	1,571	28,769	2,726	.....	66,514
Grapes (all purposes)	tonne	163,533	380,863	5,559	271,083	10,837	.....	831,875
Wine made	'000 litres	66,232	34,309	118	181,907	3,510	.....	286,090
Livestock numbers, 31 March 1972—								
Sheep and lambs	'000	62,000	29,524	14,604	17,970	34,405	4,237	162,939
Cattle	'000	7,410	5,461	9,022	1,495	1,975	829	27,377
Pigs	'000	1,059	590	535	479	427	104	3,198
Livestock slaughtered for human consumption—								
Sheep	'000	8,820.2	11,954.4	2,479.2	2,459.0	4,106.0	813.0	30,657.1
Lambs	'000	7,821.0	8,129.2	938.9	2,684.5	1,894.5	662.2	22,326.3
Cattle	'000	1,472.2	1,515.8	1,456.8	255.5	383.6	165.4	5,344.6
Calves	'000	245.0	558.7	251.7	35.1	5.3	19.3	1,116.2
Pigs	'000	1,093.7	1,050.9	794.1	435.7	367.3	165.0	3,927.8
Wool production	mil. kg	281.8	192.4	83.2	117.9	178.2	21.1	875.4
Whole milk production—								
All purposes	'000 litres	1,058,936	4,085,005	767,866	457,732	254,682	451,127	7,078,867
Fisheries production—								
Fish—live weight	'000 lb	37,203	35,039	9,944	24,026	13,065	5,247	125,386
Crustaceans—								
gross weight	'000 lb	6,336	1,762	19,160	8,601	23,850	3,256	68,771
Gold bullion	oz	2,125	6,612	34,865	4	462,009	.....	667,614
Iron ore	'000 tons	.....	.....	.....	6,202	51,834	(g) 2,166	61,122
Gross value of production—								
Agriculture	\$'000	404,527	301,742	433,570	213,207	215,998	35,870	1,606,815
Pastoral	'000	480,649	394,451	271,261	153,068	199,443	40,554	1,564,456
Dairying	'000	156,621	266,880	75,630	47,262	28,262	32,103	607,323
Poultry farming	'000	86,717	48,834	26,671	15,803	16,179	5,624	200,715
Bee keeping	'000	2,760	825	595	1,364	729	166	6,456
Hunting	'000	4,759	2,406	1,320	573	838	259	10,185
Forestry	'000	41,622	39,698	21,143	11,935	14,660	21,927	151,699
Fishing, pearling and whaling	'000	18,925	9,507	11,380	11,751	30,817	6,808	91,981

(a) Includes Northern Territory and Australian Capital Territory except where indicated ; see footnote (b). (b) Incomplete. Excludes Northern Territory and/or Australian Capital Territory. (c) Includes production from area sown simultaneously with oats. (d) Sown 1970-71. (e) Harvested from crop sown in 1970-71. (f) Includes onions and potatoes for Northern Territory and Australian Capital Territory. (g) Iron concentrate.

SEASONAL CALENDAR

The following calendar is intended to show the main periods when principal agricultural and pastoral activities are carried out in Western Australia. Operations are generally confined to the periods shown but are subject to variation according to such factors as geographical location within the State, the variety of seed sown (or trees and vines planted) and exceptional seasonal conditions.

SEASONAL CALENDAR

Item	Period	
	Sowing or planting	Harvesting
Pastures—		
Clovers	April to June	December to April
Medics	April to June	December to April
Grain—		
Wheat	May to mid-July	November to January
Oats	May and June	November and December
Barley	May to July	November and December
Rye	May and June	November and December
Sweet Lupins	April to June	November to January
Hay—		
Wheaten	May and June	October and November
Oaten	April to June	October and November
Cotton	November to February	June to October
Linseed	May to July	December and January
Vegetables—		
Beans, Runner—		
Carnarvon area	March to September	May to November
Perth Division	August to March	November to June
Green Peas—		
For processing	May to September	October to December
Fresh	May to September	August to December
Potatoes—		
Early planting—		
Perth and South-West	June and July	October to December
Mid-season planting—		
Perth, South-West and Southern Agricultural	July to November	November to March
Late planting—		
South-West and Southern Agricultural	November to February	February to June
Onions	March to November	September to April
Tomatoes—		
Carnarvon and Geraldton areas	February to August	May to December
Other areas	June to February	October to June
Fruit—		
Apples	June to August	February to May
Apricots	June and July	December and January
Bananas	September to March	July to June
Lemons	July and August	July to June
Mandarins	July and August	May to September
Nectarines	June and July	January and February
Olives	July and August	March and April
Oranges, Navel	July and August	May to September
Oranges, Valencia	July and August	August to February
Peaches	June and July	December to March
Pears	June and July	February and March
Plums	June and July	December to March
Grapes—		
For table use	July to September	January to May
For wine making	July to September	February to April
For drying	July to September	February
Shearing and lambing—		
Shearing—		
Pastoral areas	March to August	
Agricultural areas	February to November	
Lambing—		
Pastoral areas	April to July	
Agricultural areas	April to September	

BUSHEL WEIGHTS

The production of fruit and certain other commodities is generally recorded in bushels. While the weight of a bushel varies according to the nature of the product, it is also subject to considerable variation on account of such factors as method of packing and size and variety within each kind of product. The average bushel equivalent weights set out on the next page may be used to convert production to kilograms.

BUSHEL WEIGHTS

Product	Weight per bushel	Product	Weight per bushel	Product	Weight per bushel
	kg		kg		kg
Apples	19	Lemons	22	Passion fruit	15
Apricots	22	Loquats	20	Peaches	20
Bananas	25	Mandarins	22	Pears	20
Cherries	22	Nectarines	23	Plums	26
Figs	20	Olives	25	Quinces	19
Grapefruit	19	Oranges	22	Tomatoes	20

AGRICULTURE

Wheat

Wheat has been grown from the earliest years of settlement and a brief synopsis of the development of production is given in the *Western Australian Year Book*, No. 7-1968 and earlier issues. By 1968, the area of land sown to wheat had increased to 3.0 million hectares from which a record harvest of 3.1 million tonnes was obtained for an average yield of 1.037 tonnes per hectare. With the introduction of the Wheat Delivery Quotas Plan in 1969 (see page 341) the area sown to wheat decreased by over 900,000 hectares between 1968-69 and 1971-72. The downward trend was arrested in 1972-73 when quotas were raised and 2.4 million hectares were sown. Despite the increase in area sown, production was substantially less than in 1970-71 and 1971-72.

Mechanisation has been of great importance in the growth of wheat farming in Western Australia owing to the relatively low average yield per hectare obtained.

Most of Western Australia's wheat production is exported as grain and flour and in the following table the fluctuations which have occurred in exports since 1910 are shown, together with figures giving the estimated total wheat equivalent. The United Kingdom has been the most consistent purchaser of the State's wheat, but since 1961-62 the People's Republic of China and Japan have been the most important customers and in 1969-70 their purchases together accounted for 78 per cent of the State's total wheat exports. However, in 1971-72 their combined purchases were only 25 per cent of the State's total exports even though Japan was the most important customer with purchases amounting to 572,000 tonnes. In 1971-72 other principal buyers, in order of importance, were the United Arab Republic and the United Kingdom. In the same year principal customers for flour were Mauritius, the Union of Arab Emirates, Qatar, Saudi Arabia and Oman. Further details of exports appear in Chapter IX, Part 1.

Details of areas sown and wheat produced since 1900 are given in the table on page 339.

EXPORTS OF WHEAT AND FLOUR

Year	Wheat	Flour (a)	Estimated total wheat equivalent
	tonnes	tonnes	tonnes
1910	54,827	2,559	58,436
1919-20	249,053	117,254	414,381
1929-30	679,116	62,659	767,466
1939-40	417,226	83,159	534,344
1949-50	585,417	105,065	733,558
1959-60	999,173	79,697	1,111,546
1967-68	2,373,185	41,918	2,432,289
1968-69	1,521,373	35,100	1,570,864
1969-70	1,814,774	31,173	1,858,727
1970-71	2,670,891	26,670	2,708,496
1971-72	2,587,504	18,882	2,614,128

(a) Ships' stores are excluded from figures for 1959-60 and subsequent years.

WHEAT FOR GRAIN—AREA AND PRODUCTION

Season	Area sown	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1900-01	29,947	21,092	0·70	309,862
1910-11	235,527	160,517	0·68	2,162,432
1920-21	516,379	333,336	0·65	11,023,272
1930-31	1,600,938	1,456,141	0·91	12,201,176
1940-41	1,062,301	573,159	0·54	8,647,906
1950-51	1,288,925	1,358,056	1·05	65,328,246
1960-61	1,627,242	1,739,074	1·07	92,290,238
1968-69	2,952,222	3,060,389	1·04	151,305,976
1969-70	2,747,080	1,815,277	0·66	*90,961,092
1970-71	2,361,146	2,956,969	1·25	*153,226,816
1971-72	2,041,887	2,165,160	1·06	115,934,427
1972-73	2,437,412	2,002,975	0·82	109,398,972

* Revised.

Bulk Handling of Wheat. The rapid increase in the production and export of wheat between 1910 and 1920 caused problems of transport and storage, and proposals for the bulk handling of the grain led to the formation of a company for this purpose in 1920. This original undertaking was wound up before commencing operations because the technical difficulties then appeared too great and the saving in handling costs problematical. In the early 1930s depressed wheat prices once again stimulated the search for cheaper methods of storage and transportation of grain. Experiments were carried out in the Wyalkatchem area during the 1931-32 season which essentially involved the adaptation of existing bagged wheat storages and bagged wheat mobile elevators to handle wheat in bulk.

The experiment proved successful and the Bulk Handling Act of 1935 gave a growers' co-operative the right of operating, under franchise, a bulk handling system. The co-operative company was Co-operative Bulk Handling Limited which had been formed in 1933, the initial capital being subscribed by two existing co-operatives, The Westralian Farmers and The Grain Pool. In founding Co-operative Bulk Handling Limited these two organisations had provided that as soon as the system was established and the initial liability repaid, ownership and control would be passed to the users of the system.

With its present toll system of operation Co-operative Bulk Handling Limited essentially conforms to the Rochdale principles of co-operation. The grower delivering grain to the Company pays a toll on each bushel delivered. For the first \$2 of toll, he receives one ordinary share in the company, which must be returned to the company if he ceases to deliver grain. For the remainder of his tolls he receives a debenture repayable in full over a ten-year cycle. The tolls are used for capital expenditure and for the repayment of previous tolls summarised into debentures. The toll system thus creates a revolving capital fund subscribed by the growers actually using the system, and in turn achieves perpetual and complete user-ownership. Each user of the system receives a share but only one share. He cannot accumulate any additional shares and thus has only one vote.

By 1943 the original construction programme had been completed and all debts repaid. At this time the decision was made to hand the system over to the growers to enable them to control and direct future expansions for their own benefit.

To the outbreak of the Second World War and beyond, the company continued its policy of expansion and modernisation. Services to off-line receival points were begun in the 1940-41 season and in 1951 growers of oats and barley requested that the co-operative include these grains in its system. Since then the company has stored and transported up to six grain types in many varieties and grades. Laboratory and sampling techniques have been extended, ensuring high quality control and a continued effort to meet marketing requirements. In addition Co-operative Bulk Handling Limited provided and operates transfer depots for handling grain from narrow gauge to standard gauge railway wagons at

Merredin, Midland and Northam. The depots are concrete vertical silo systems and between them handle all the grain destined for shipment through the Fremantle terminal which handles something more than half the total receivals.

In the 1960s, Co-operative Bulk Handling Limited commenced a modernisation programme of its country receival points. Original receival points were conceived in the era of horse-drawn transport and were spaced about seven miles apart. Motor transport and better roads meant that a twenty-mile spacing would be adequate, while the mechanisation of farming and the improvement of farming techniques indicated a large size of storage was required. The modernisation programme has involved the progressive replacement of the older bins, permanent roofed bulkheads and open bulkheads with horizontal storages built of either concrete or steel and equipped with integrated handling machinery, or provision for such machinery to be installed at a later date.

In addition to country receival points storage and transport, Co-operative Bulk Handling Limited provided and operates terminal depots for bulk wheat shipments at Albany, Bunbury, Esperance, Fremantle and Geraldton. The first stage of a modern deep-draught bulk loading terminal at Kwinana has been completed for the co-operative. This involved the construction of an initial horizontal storage unit of 381,871 cubic metres capacity and wheat receivals commenced on 1 December 1969. Construction of the second stage of the terminal has commenced and is scheduled for completion in 1975. This second stage involves the building of a 144-vertical cell storage block, a second horizontal storage unit, a jetty to carry a shiploading gallery, and various connecting galleries. The total cost of the second stage is estimated at \$48 million and on completion the Kwinana terminal will have a capacity of 1,154,706 cubic metres and be capable of loading at a rate of 5,000 tonnes an hour.

At 30 September 1973, total permanent storage in the country was 5,372,500 cubic metres and at the ports 1,987,600 cubic metres. The initial storage constructed in 1931 provided for 23,276 cubic metres. The largest seasonal production that Co-operative Bulk Handling Limited has handled was 5,292,773 cubic metres of all grains in the 1970-71 season. By contrast, in the initial season the system handled 46,000 cubic metres.

Marketing of Wheat. The Australian Wheat Board is the sole authority for the marketing of wheat within Australia and of wheat and flour for export. It derives its authority from the provisions of the Wheat Stabilization Plan 1968-69 to 1972-73 established under joint Commonwealth and State legislation to replace similar legislation which expired after the marketing of the 1967-68 crop. The Plan has been extended for a further year under the provisions of the *Wheat Industry Stabilization Act 1973* (Commonwealth) and will cover the 1973-74 harvest. The principal object of the Plan is to ensure that growers receive a satisfactory income from their wheat and this is achieved by a guaranteed return based on an export price as determined and applicable on up to 5.4 million tonnes of wheat exported each season from Australia. This required the establishment of a fund by levying under authority of the *Wheat Export Charge Act 1968-1973* (Commonwealth), a tax on exports for which a price in excess of the guaranteed price is received. Should the price obtained fall below the guaranteed price it is provided that the difference shall be paid from the fund or, if that source is exhausted, by the Australian Government. A further provision with a stabilising effect on the industry fixes the price at which wheat for home consumption may be sold.

By virtue of the *Wheat Industry Stabilization Act 1968-1973* (Commonwealth) and of the *Bulk Handling Act, 1967-1973*, Co-operative Bulk Handling Limited acts as the licensed receiver for the Australian Wheat Board and handles all wheat produced for marketing in Western Australia.

Under the provisions of the *Wheat Tax Act 1957-1973* (Commonwealth), a levy of 9.186 cents per tonne is made on wheat delivered to the Australian Wheat Board. This money, contributed by the growers, is spent by the Wheat Industry Research Council and State Wheat Research Committees set up under the provisions of the *Wheat Research Act 1957*. The Australian Government has undertaken to supply additional funds, with a maximum of \$1 for every \$1 of growers' contributions.

Wheat Standards. The procedure approved by the Western Australian Wheat Standards Committee for determining the standard known as F.A.Q. (fair average quality) provides for samples being drawn progressively at each country receipt point and port of shipment during the harvest period. After all samples are assembled they are sorted into zones of origin (Geraldton, Fremantle, Bunbury, Albany and Esperance), the zones being fixed in relation to each siding's natural port terminal. Each zone is then taken separately, the samples from the sidings in the zone being bulked together and thoroughly mixed and it is from these mixtures that each zone's contribution to the main bulk sample for the State is drawn.

Zone contributions are then bulked together and thoroughly mixed, after which ten weighings are taken on a Schopper one-litre scale chondrometer and from the average of those weighings the F.A.Q. standard for the season is declared. Subsequently, the wheat is subjected to mechanical and quality tests.

Official standard samples are then widely distributed to commercial interests and appropriate Government Departments and instrumentalities both locally and overseas, as being representative of the wheat of the particular season which is on offer to the world grain markets.

Wheat Delivery Quotas Plan. The Australian Wheat Growers' Federation put forward proposals, in March 1969, for the allotment of quotas on deliveries of wheat to the Australian Wheat Board. The Federation's proposals, were mainly designed to bring marketable supplies of wheat more into line with available outlets, following the record Australian and State harvests in 1968-69. The proposals, which first became effective for the 1969-70 harvest, established for Western Australia a quota of 2.3 million tonnes for deliveries of wheat for that season.

State Governments have the responsibility of implementing the quota plan within the States and separate enabling legislation has been enacted in each State. Particulars of the statutory provisions relating to the establishment in Western Australia of a quota scheme with respect to the delivery and marketing of wheat, are contained in the *Wheat Delivery Quotas Act, 1969-1973*.

The States are responsible for determining the method of allocation of individual quotas within their respective boundaries. In Western Australia, the *Wheat Delivery Quotas Act, 1969-1973* provides for the establishment of a Wheat Quotas Committee, consisting of three members appointed by the Minister for Agriculture. Subject to the direction of the Minister, the Committee is empowered under the Act to determine individual quotas for growers, but quotas may be reviewed by the Minister at any time.

The allocation in this State of individual quotas for 'established farms' for the season 1969-70 was made on the basis of the average for the farm of the best five deliveries made in the seven seasons from 1962-63 to 1968-69. Separate provisions applied to wheat growers on 'recently acquired farms' and 'new land farms'.

The allocation of quotas was not regarded as satisfactory by many in the industry and an independent Committee of Enquiry was formed to investigate the basis of allocation and to arrive at a more equitable distribution.

In an endeavour to alleviate various anomalies, a revised method of allocating the total State quota of 2.4 million tonnes was adopted for the 1970-71 season.

Further modifications to the method of allocation were made for the 1971-72 season and again for 1972-73. The States' wheat quotas for these two years were 2.1 and 2.6 million tonnes, respectively.

For the season 1973-74 the State's allocation was set at 3.1 million tonnes. However, complementary State and Commonwealth legislation provided that the Australian Wheat Board 'may have regard to the possibility that the Australian wheat quota originally determined for that season, may be increased by a quantity not exceeding 544,311 tonnes'.

All wheat accepted as 'quota wheat' is the subject of normal Australian Wheat Board payments within the framework of the *Wheat Industry Stabilization Act 1968-1973*.

Wheat Varieties. Of 2,472,582 hectares sown to wheat in 1972-73, whether for grain, hay or green fodder, 1,545,190 hectares or 62.5 per cent were sown to Gamanya. The next most popular variety of wheat, in terms of area sown, was Falcon with 336,051 hectares or 13.6 per cent of the total. Further details of the areas sown to individual varieties of wheat appear in previous issues of the Year Book or in the publication *Statistics of Western Australia—Rural Industries* issued by this Office.

In the next table, holdings growing wheat for grain in 1970-71, in size groups of the area sown, are classified according to the size of the holding. Of the 22,592 rural holdings of all types in the State, wheat for grain was grown on 8,921. Holdings of between 1,000 and 5,000 acres accounted for 76 per cent of this number and holdings which sowed between 200 and 1,000 acres represented 59 per cent.

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO ACREAGE SOWN AND SIZE OF HOLDING—SEASON 1970-71

Size of holding (acres)	Area of wheat for grain (acres)										Total, all rural holdings
	1-99	100-199	200-299	300-399	400-499	500-699	700-999	1,000-1,999	2,000 and over	Total	
1-49	6	....	....	....	....	....	....	....	....	6	3,612
50-99	18	....	....	....	....	....	....	....	....	18	684
100-149	12	....	....	....	....	....	....	....	....	12	648
150-199	7	....	....	....	....	....	....	....	....	7	532
200-299	14	1	....	....	....	....	....	....	....	15	955
300-399	13	8	....	....	....	....	....	....	....	21	791
400-499	14	12	1	1	....	....	....	....	....	28	672
500-599	20	5	2	1	1	....	....	....	....	29	532
600-699	20	13	6	1	....	....	....	....	....	40	476
700-799	29	15	3	1	1	....	....	....	....	49	389
800-899	33	23	9	5	....	2	....	....	....	77	383
900-999	33	23	26	20	6	3	....	....	....	111	381
1,000-1,999	139	120	113	77	34	31	7	2	....	523	1,388
1,400-1,999	204	169	216	159	123	175	51	11	....	1,108	1,862
2,000-2,999	227	261	288	308	263	419	278	90	2	2,136	3,039
3,000-3,999	97	135	148	187	211	374	351	260	8	1,771	2,254
4,000-4,999	38	50	68	101	93	206	285	350	14	1,205	1,457
5,000-9,999	36	34	29	72	60	154	244	618	198	1,445	1,637
10,000 and over	7	5	6	7	4	13	24	91	163	320	900
Total	967	874	915	940	801	1,377	1,240	1,422	385	8,921	22,592

In the following table, details of area sown and wheat produced in each of the Australian States and Capital Territory are shown for the period 1968-69 to 1972-73.

WHEAT FOR GRAIN—AREA AND PRODUCTION: AUSTRALIAN STATES

Season	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australian Capital Territory	Australia
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AREA SOWN TO WHEAT FOR GRAIN ('000 HECTARES)

1968-69	4,031	1,612	724	1,517	2,952	7	2	10,845
1969-70	3,489	1,335	609	1,299	2,747	6	1	9,486
1970-71	2,216	760	334	802	2,361	4	(a)	6,478
1971-72	2,426	1,040	556	1,069	2,042	5	(a)	7,138
1972-73	2,618	1,087	471	986	2,437	4	(a)	7,604

PRODUCTION OF WHEAT ('000 TONNES)

1968-69	5,855	2,469	1,143	2,263	3,060	11	2	14,804
1969-70	4,430	2,274	405	1,610	1,815	10	2	10,546
1970-71	3,010	1,004	120	790	2,957	8	1	7,890
1971-72	2,410	1,797	722	1,407	2,165	8	1	8,510
1972-73	1,954	1,249	405	815	2,003	8	(a)	6,434

YIELD PER HECTARE (TONNES)

1968-69	1.45	1.53	1.58	1.49	1.04	1.57	1.00	1.37
1969-70	1.27	1.70	0.67	1.24	0.66	1.67	2.00	1.11
1970-71	1.36	1.32	0.36	0.99	1.25	2.00	1.60	1.22
1971-72	0.99	1.73	1.30	1.32	1.06	1.60	1.80	1.19
1972-73	0.75	1.15	0.86	0.83	0.82	1.81	1.24	0.85

(a) Less than 500.

Oats

Although oats have been grown in Western Australia since the early development of wheat farming, cultivation was somewhat limited until stimulated by the introduction of large-scale sheep raising in the agricultural areas, when their high nutritional worth as stock feed made them a very valuable crop. The area sown to oats for grain increased from 78,301 hectares in 1920 to 111,238 in 1930, to 173,682 in 1940, to 237,025 in 1950 and 538,153 in 1960. It then remained reasonably static until 1972 when the area sown to oats fell to 296,666 hectares.

In addition to their importance as local stock feed, oats are exported in substantial quantities. In 1972-73 the total sold overseas was 23,534 tonnes, the principal buyers being the United Kingdom, Italy, Malaysia and Japan. Exports to other Australian States are negligible.

Although growers are free to market oats in any way they wish, in practice a large proportion of all sales, whether for export or the local market, is effected through the Western Australian State Voluntary Oats Pool, which is conducted by the Grain Pool of W.A. under the control of the Minister for Agriculture. Co-operative Bulk Handling Limited as the Pool's licensed receiver, handles all oats marketed through the Pool.

OATS FOR GRAIN—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1968-69	442,107	416,251	0.94	12,977,507
1969-70	461,111	280,562	0.61	5,909,782
1970-71	519,558	519,939	1.00	18,100,046
1971-72	453,885	413,902	0.91	10,255,815
1972-73	296,666	212,001	0.71	5,793,261

Barley

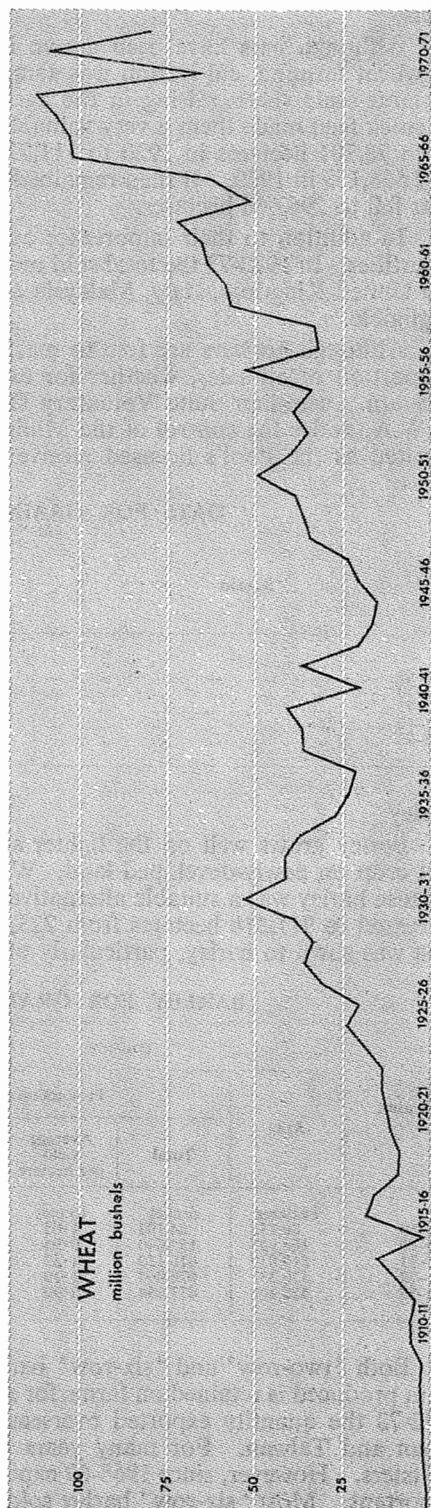
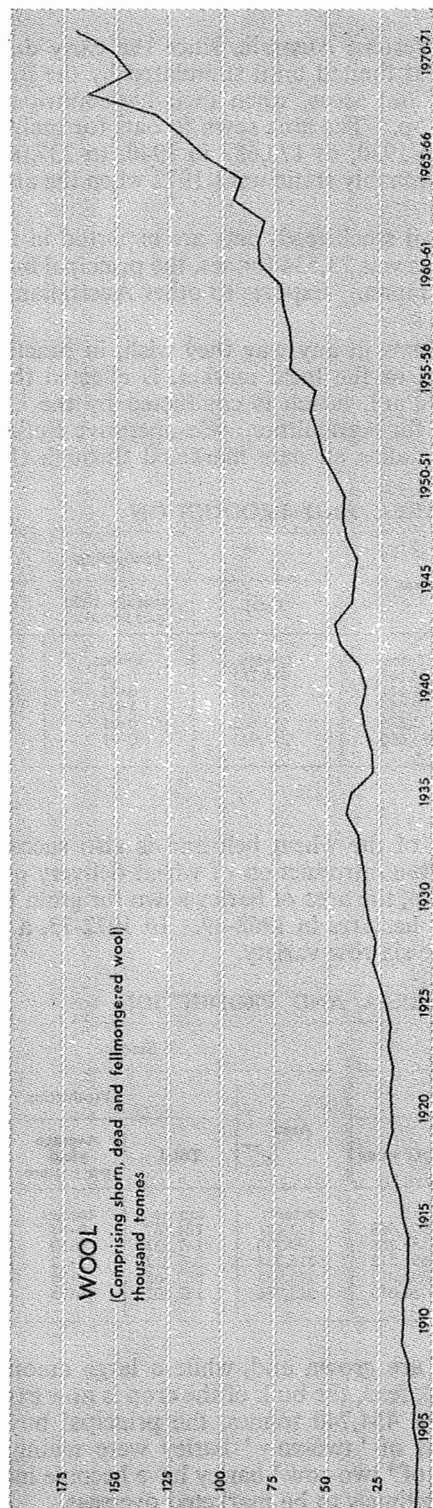
Barley grows well on the lighter soils of the wheat belt and is also successful as a first crop on newly-developed land. With the introduction of wheat delivery quotas and because barley was a suitable alternative crop, the area of barley sown for grain in 1971-72 increased to 911,318 hectares from 223,714 hectares in 1968-69. In 1972-73, a decreased area was sown to barley, particularly of the six-row variety.

BARLEY FOR GRAIN—AREA AND PRODUCTION

Season	Two-row				Six-row			
	Area	Production			Area	Production		
		Total	Average yield per hectare	Gross value		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$	hectares	tonnes	tonnes	\$
1968-69	80,233	84,193	1.05	3,956,665	143,481	124,167	0.87	4,661,940
1969-70	164,993	155,640	0.94	5,535,888	199,300	117,833	0.59	3,338,133
1970-71	315,859	416,120	1.32	20,681,812	316,234	353,212	1.12	13,511,703
1971-72	570,333	678,068	1.19	26,898,012	340,985	322,305	0.95	12,325,100
1972-73	528,392	477,854	0.90	22,414,040	215,756	162,502	0.75	7,109,199

Both 'two-row' and 'six-row' barley are grown and, while a large amount of the grain produced is retained on farms for stock feed, the bulk of the crop is now exported. In 1972-73 the quantity exported overseas was 454,740 tonnes, the principal buyers being Japan and Taiwan. For many years sales of 'two-row' barley were mainly to local maltsters. However, since 1968-69 exports of 'two-row' barley have become increasingly important. Most 'six-row' barley sold continues to be marketed overseas.

Wool and Wheat – Annual Production, 1901 to 1971-72



The marketing of barley, both for export and for local consumption, is controlled by the Western Australian Barley Marketing Board, Co-operative Bulk Handling Limited acting as the Board's licensed receiver.

Other Grains and Pulse

Increasing interest has been shown in lupin and rape seed production in recent years. Among the factors which have encouraged rapid expansion in area sown are the effect of wheat delivery quotas and the relatively favourable export prospects for oilseeds and their oils and meals. Grain sorghum and rye are grown, but only in small quantities.

LUPINS (a) AND RAPE SEED—AREA AND PRODUCTION

Season	Lupins				Rape seed			
	Area	Production			Area	Production		
		Total	Average yield per hectare	Gross value		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$	hectares	tonnes	tonnes	\$
1968-69	(b)	(b)	(b)	(b)	(c)	(c)	(c)	(c)
1969-70	(b)	(b)	(b)	(b)	84	57	0.68	5,460
1970-71	(b)	(b)	(b)	(b)	7,465	2,603	0.35	14,262
1971-72	26,628	21,511	0.81	1,172,132	36,756	23,240	0.63	2,307,387
1972-73	44,341	15,126	0.34	960,569	41,566	8,526	0.21	1,010,122

(a) For processing or feed.

(b) Not available.

(c) Not available for publication.

Hay

Large quantities of pasture hay are cut from clover and grass pastures, production in 1972-73 being 303,934 tonnes from 89,253 hectares. The principal cereal hay crop is oats and 255,122 tonnes of oaten hay were cut in 1972-73 from 92,313 hectares. Wheat is the only other cereal crop which is used extensively for this purpose and in 1972-73 the production was 72,327 tonnes from 30,478 hectares. Barley, vetches, lucerne, rye and rape are also used for hay making but they are of minor importance only.

HAY—AREA AND PRODUCTION

Season	Pasture		Oaten		Wheaten		Other (a)		Total	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	hectares	tonnes	hectares	tonnes	hectares	tonnes	hectares	tonnes	hectares	tonnes
1968-69	76,833	290,526	42,951	157,173	13,877	43,204	4,409	16,857	138,069	507,761
1969-70	57,450	168,821	88,674	227,675	47,844	96,740	8,462	23,017	202,430	516,252
1970-71	72,795	266,008	82,397	294,727	26,253	84,598	8,339	27,504	189,784	672,838
1971-72	80,311	311,533	69,502	251,912	20,240	65,450	6,703	24,053	176,756	652,947
1972-73	89,253	303,934	92,313	255,122	30,478	72,327	11,873	32,882	223,917	664,265

(a) Mainly barley, vetch, lucerne, rye and rape hay.

Pastures

The first established pastures in the State were cultivated to provide grazing for dairy cattle but, with the rapid increase in the number of sheep carried on wheat farms, by far the greater area is now located in the wheat-growing districts.

Subterranean clover was one of the first pasture species sown in these districts and it is still the most important, although other clovers, medics and a variety of grasses including Wimmera rye grass and perennial rye grasses are also grown extensively. The present practice in the higher-rainfall areas is to sow a mixture of two or more species, selected for their suitability to the type of soil and rainfall, to give a legume grass pasture.

From 0·8 million hectares in 1945-46, the area under established pasture has increased remarkably to 6·8 million hectares in 1972-73. The top-dressing of pastures with super-phosphate has developed to such an extent that this treatment is now general practice.

Western Australia is in a particularly good position to produce seed of annual legumes and grasses on a large scale and in 1971-72 produced approximately one-third of the total Australian crop.

In recent years considerable areas of new land have been cleared, much of it along the south coast where the growing season is six or seven months. It has been found that if heavier seed and fertiliser applications are used, good subterranean clover seed crops can be grown in the first year on this new land. Similarly, in more inland districts good yields of barrel medic can be obtained on suitable soil types. The paddocks generally being used are large, open and only gently undulating, and are thus suitable for the operation of modern harvesting machines. Very little, if any, rain falls in the summer months and this ensures ideal harvesting conditions.

The development of suction harvesting machines in recent years has enabled this potential to be exploited. Suction harvesters are now used to harvest most of the more important small-seeded legume crops (subterranean clover, barrel medic and rose clover).

Seed certification schemes are operated by the Department of Agriculture for the main species of pasture seed. These schemes ensure that buyers are in a position to obtain good quality seed of the strain they require free from weed seeds. Certification schemes have assisted greatly in marketing and in allowing the development of a sound export trade.

There is an important export trade in subterranean clover seed and in 1972-73 the total exported was 768,897 kilograms, over two-thirds of which went to other Australian States.

Details of area and production of pasture seed for the five years 1968-69 to 1972-73 are given in the next table.

PASTURE SEED HARVESTED

Season	Principal pasture seed								Total pasture seed
	Subterranean clover		Lupins		Barrel medic		Wimmera rye grass		Area harvested
	Area harvested	Pro-duction	Area harvested	Pro-duction	Area harvested	Pro-duction	Area harvested	Pro-duction	
	hectares	kilograms	hectares	kilograms	hectares	kilograms	hectares	kilograms	hectares
1968-69	39,690	9,630,174	(a)	(a)	4,205	672,768	730	92,986	48,703
1969-70	25,664	5,179,481	(a)	(a)	2,036	204,842	314	70,760	*30,197
1970-71	14,479	3,405,708	(a)	(a)	2,385	295,652	1,055	180,031	*19,690
1971-72	13,079	3,145,300	2,836	1,384,137	1,918	236,684	960	128,276	20,524
1972-73	18,293	3,380,516	4,356	1,037,969	1,242	157,773	1,173	98,207	25,877

(a) Separate details of lupins for pasture seed not available prior to 1971-72.

* Revised.

Green Feed

Large areas of oats are grown for use as green feed for stock. Among other crops which are cultivated for this purpose, but to a far lesser extent, are barley, wheat, field peas, rye and forage sorghum. The total area of crops used for green feed was 124,254 hectares in 1972-73.

GREEN FEED—AREA GRAZED OR CUT (Hectares)

Season	Oats	Barley	Wheat	Field peas	Forage sorghum	Rye	Other (a)	Total
1968-69	94,506	8,624	3,283	4,324	3,310	2,189	2,181	118,418
1969-70	113,247	13,555	7,649	3,423	8,557	2,169	3,643	152,244
1970-71	107,606	17,707	5,996	3,150	4,325	2,835	2,505	144,124
1971-72	104,802	23,382	5,380	3,760	2,437	2,180	2,319	144,259
1972-73	90,107	21,147	3,641	3,573	1,740	1,750	2,296	124,254

(a) Mainly vetches, millet, grain sorghum and maize.

Cotton

The first commercial crop of cotton was grown at Kununurra in 1962-63 on land irrigated from the Ord River Diversion Dam at Bandicoot Bar. A cotton ginnery to process the seed cotton was installed at Kununurra in 1963 and a second ginnery commenced operations in May 1967.

Under the *Raw Cotton Bounty Act* 1963-1969, the Australian Government paid a bounty on raw cotton of grade higher than 'strict good ordinary' and with a staple length of not less than seven-eighths of an inch which was produced in Australia. Bounty was payable under the Act up to and including the year which commenced on 1 March 1971. Since then, the State Government has supported the Ord cotton growers with payments of up to six cents per kilogram of lint depending upon staple length and grade. This form of financial assistance is under review.

COTTON—AREA AND PRODUCTION

Season	Area	Production of seed cotton		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	kilograms	\$
1968-69	4,768	*11,773	*2.47	*1,892,000
1969-70	*3,370	*9,779	*2.90	*1,680,700
1970-71	*2,918	*9,435	*3.23	*1,586,887
1971-72	3,442	12,564	3.65	2,309,958
1972-73	3,861	11,271	2.92	1,332,062

* Revised.

Potatoes

The cultivation of potatoes, the State's principal vegetable crop, is confined largely to the higher-rainfall areas of the South-West. Winter crops are planted during June and early July on the frost-free hillsides and drained flats of the coastal areas between Waroona and Donnybrook and on the market garden land in the Perth Statistical Division. Mid-season plantings are made from the middle of July to November on summer-moist areas or on sprinkler-irrigated land in the Shires of Manjimup, Busselton, Albany and Waroona and in market gardens in the Perth Statistical Division. Late crops are planted between mid-November and the end of February in all districts growing early and mid-season crops, other than the Perth Statistical Division.

The average yield of potatoes per hectare in Western Australia is consistently very much greater than that for Australia as a whole, and in 1972-73 comparative yields were 26.6 tonnes and 20.5 tonnes per hectare. This is due mainly to the favourable climatic conditions in Western Australia and the increasing use of sprinkler irrigation. Delaware, the principal variety grown in the State, gives high yields under a wide range of growing conditions. There is a substantial export surplus, the bulk of which usually goes to the other Australian States with smaller consignments being sent overseas, principally to Singapore.

Potato production in Western Australia is controlled, under the provisions of the *Marketing of Potatoes Act, 1946-1973*, by the Western Australian Potato Marketing Board, which is the sole marketing authority for potatoes produced in the State. The object of this provision is to ensure adequate supplies for local consumption and effective marketing of crops.

POTATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1968-69	2,666	75,629	28.37	5,613,344
1969-70	2,562	68,242	26.64	5,390,001
1970-71	2,528	69,150	27.35	6,299,365
1971-72	2,684	68,420	25.49	5,923,475
1972-73	2,378	63,282	26.61	6,271,668

Onions

The production of onions is confined largely to the metropolitan and adjacent areas, Spearwood being the main centre. In these districts onions are usually grown on light sandy soils and yields of up to 50 tonnes per hectare are obtained. An increase in area occurred during each season from 1958-59 to 1962-63 when 206 hectares were planted. The area planted then declined steadily over the next three years, with a slight recovery occurring in 1966-67. In 1972-73 132 hectares were planted for a production of 4,877 tonnes or 37·1 tonnes per hectare.

Onions are imported annually into Western Australia during the winter but a surplus is produced locally during summer months and is exported, in the main, to overseas markets, the most important being Singapore.

ONIONS—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	tonnes	tonnes	\$
1968-69	145	5,582	38·50	541,478
1969-70	122	4,499	36·88	487,056
1970-71	122	4,546	37·26	558,424
1971-72	139	5,045	36·29	804,686
1972-73	132	4,877	37·06	572,677

Tomatoes

The main centres of production of tomatoes are at Carnarvon and Geraldton and in the districts around Perth. At Carnarvon and Geraldton, because of the warm winter climate, growers are able to produce early crops and take advantage of the high prices ruling on the Melbourne market during the winter and spring. They also supply substantial quantities to the Perth market and there is a consistent export trade with Christmas Island (Indian Ocean) and Singapore.

Supplies to the Perth market from December to June are grown in and near the metropolitan area, principally in the Wanneroo and Osborne Park districts. Tomatoes are also grown in a number of districts in the South-West and Southern Agricultural Divisions.

The total area under tomatoes reached a peak of 629 hectares in 1944-45 but the average yield per hectare in that year was low and total production was only 755,898 half-bushel cases. Since then, although the area has declined, yields per hectare have improved and production in 1972-73 was 835,072 half-bushel cases from 245 hectares, an average yield of 3,402 half-bushel cases per hectare.

TOMATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average yield per hectare	Gross value
	hectares	half-bushel cases	half-bushel cases	\$
1968-69	248	716,812	2,890	1,885,198
1969-70	233	732,055	3,142	2,023,791
1970-71	242	785,254	3,245	1,915,388
1971-72	250	858,137	3,433	1,974,698
1972-73	245	835,072	3,402	2,386,978

Other Vegetables

In addition to the cultivation of potatoes, onions and tomatoes, previously mentioned, many other vegetables are produced, the bulk of them in or near the metropolitan area where growers benefit not only from proximity to the principal market but also from an abundant supply of water at relatively shallow depths. Small quantities are

also produced in many country districts. An important early crop of beans is grown at Carnarvon and transported by road to Perth. Approximately half of this crop is then railed or airfreighted to Adelaide.

Details of the area and production of the principal vegetables other than potatoes, onions and tomatoes for the years 1968-69 to 1972-73 are given in the next three tables.

TURNIPS, CARROTS, PARSNIPS, BEETROOT—AREA AND PRODUCTION

Season	Turnips (swede and white)			Carrots			Parsnips			Beetroot		
	Area	Production		Area	Production		Area	Production		Area	Production	
		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value
	ha	kg	\$	ha	tonnes	\$	ha	kg	\$	ha	kg	\$
1968-69	51	606,413	54,539	160	8,950	692,387	35	658,598	102,674	23	424,039	49,914
1969-70	39	361,148	42,290	155	5,775	439,942	35	517,266	107,216	21	303,680	38,676
1970-71	47	444,278	58,377	179	6,653	748,911	38	580,698	127,908	19	278,752	34,239
1971-72	47	476,006	44,788	178	6,640	563,317	35	493,767	75,131	6	173,104	19,199
1972-73	41	370,691	45,158	188	7,083	541,212	30	469,183	107,316	8	130,784	17,944

PUMPKINS, BEANS, GREEN PEAS—AREA AND PRODUCTION

Season	Pumpkins			Beans						Green peas		
	Area	Production		French and runner			Broad			Area	Production	
		Quantity	Gross value	Area	Quantity	Gross value	Area	Quantity	Gross value		Quantity	Gross value
	ha	'000 bags	\$	ha	kg	\$	ha	kg	\$	ha	kg	\$
1968-69	346	90	357,416	392	3,442,519	1,033,348	13	59,574	9,194	920	5,352,660	232,960
1969-70	374	88	249,616	352	2,689,155	858,908	10	52,066	6,887	779	4,207,228	158,494
1970-71	416	105	410,208	370	2,969,488	801,329	12	64,089	8,478	778	7,007,289	222,333
1971-72	363	101	387,749	339	2,818,036	856,474	19	77,479	10,249	735	4,785,045	180,556
1972-73	377	95	422,361	348	2,521,325	709,492	13	56,074	6,729	660	4,936,889	167,000

CABBAGES, CAULIFLOWERS, LETTUCE—AREA AND PRODUCTION

Season	Cabbages			Cauliflowers			Lettuce		
	Area	Production		Area	Production		Area	Production	
		Quantity	Gross value		Quantity	Gross value		Quantity	Gross value
	hectares	'000 crates	\$	hectares	'000	\$	hectares	'000 crates	\$
1968-69	140	246	243,700	275	3,392	967,905	161	348	696,460
1969-70	124	225	323,955	291	3,299	829,059	169	368	831,356
1970-71	139	262	387,140	316	3,851	1,060,693	185	367	773,042
1971-72	130	245	350,164	317	4,025	1,082,538	196	400	808,182
1972-73	138	260	412,322	303	3,666	918,576	209	461	997,506

Orchards

Fruit production is largely confined to the temperate regions between Gingin to the north of Perth and Albany on the south coast. The cool, wet winters and warm, dry summers of this area permit the successful cultivation of a wide variety of fruits. In the southern and south-western sections, apples, pears and stone fruits are grown extensively while in the districts around Perth the principal crops are apples, stone fruits, citrus fruits and grapes. Outside this main fruit-growing area, banana plantations have been established at Carnarvon in the North-West.

The following table shows details of production of the principal groups of orchard fruit during the years 1968-69 to 1972-73.

FRUIT (a)—AREA AND GROSS VALUE OF PRODUCTION

Season	Area (b)			Gross value of production				
	Orchard fruit	Plantation and berry fruit	Total	Pome (c)	Citrus (d)	Stone (e)	Other (f)	Total
	hectares	hectares	hectares	\$	\$	\$	\$	\$
1968-69	9,999	267	10,265	9,013,608	1,733,777	1,212,404	1,543,256	13,503,045
1969-70	9,497	267	9,765	8,923,348	1,873,982	1,315,040	2,318,216	14,430,586
1970-71	9,404	224	9,628	9,992,014	1,837,447	1,454,684	604,952	13,889,097
1971-72	8,898	230	9,129	8,497,714	1,518,209	1,149,563	1,709,585	12,875,071
1972-73	8,448	232	8,680	9,245,258	1,572,412	1,378,292	2,052,257	14,248,219

(a) Excludes grapes. (b) Comprises bearing and non-bearing trees and plants. (c) Apples, pears and quinces.
 (d) Principally oranges, mandarins, lemons and grapefruit. (e) Plums, peaches, apricots, nectarines and cherries. (f) Bananas, loquats, figs, passion fruit, almonds and other minor fruits.

Apples

Apples, which are the principal fruit crop, account for more than half the total orchard area. Manjimup, Donnybrook, Bridgetown and Mount Barker (based on number of bearing and non-bearing trees) are the most important centres but other districts in the South-West and in the Darling Range near Perth produce large quantities. In 1972-73 the total number of bearing trees was 988,636 which produced 2,959,741 bushels, the principal varieties being Granny Smith, Jonathan, Yates, Delicious and Cleopatra.

APPLES—NUMBER OF TREES AND PRODUCTION

Season	Number of trees		Production		
	Bearing	Non-bearing	Total	Average yield per bearing tree	Gross value
			bushels	bushels	\$
1968-69	1,026,533	329,589	2,870,187	2.8	8,289,047
1969-70	1,002,497	257,371	2,610,151	2.6	8,071,987
1970-71	1,035,728	228,566	3,155,624	3.0	9,167,390
1971-72	1,042,653	205,801	2,750,076	2.6	7,771,602
1972-73	988,636	182,604	2,959,741	3.0	8,214,255

There is a valuable export trade and overseas shipments generally exceed well over 1 million bushels annually, with 1.2 million bushels being exported in 1971-72. The United Kingdom is the most important market, followed by Singapore, the United States of America, the Federal Republic of Germany and the Netherlands.

Pears

Pears are usually grown in conjunction with apples but the number of trees planted and the quantity produced are much less, the total number of bearing trees in 1972-73 being 68,030 and the production 227,484 bushels. The bulk of the crop is consumed locally but significant quantities are exported, principally to Singapore and Malaysia.

PEARS—NUMBER OF TREES AND PRODUCTION

Season	Number of trees		Production		
	Bearing	Non-bearing	Total	Average yield per bearing tree	Gross value
			bushels	bushels	\$
1968-69	68,004	19,479	191,351	2.8	721,475
1969-70	71,289	13,998	212,235	3.0	849,312
1970-71	69,135	14,414	177,488	2.6	823,390
1971-72	69,438	18,790	221,567	3.2	725,786
1972-73	68,030	18,667	227,484	3.3	1,030,674

Citrus Fruit

While the Shire of Chittering is the chief citrus fruit producer, there are other important areas near Perth in the Shires of Kalamunda, Swan, Armadale-Kelmscott, the Town of Gosnells and the Shire of Harvey (in order according to number of trees bearing and non-

bearing). Although oranges are by far the most important crop, substantial quantities of lemons, mandarins, and grapefruit are also produced.

Production is largely for local consumption but there is some export trade, mainly with Singapore, Mauritius, Malaysia and Christmas Island (Indian Ocean).

ORANGES AND MANDARINS—NUMBER OF TREES AND PRODUCTION

Season	Oranges				Mandarins			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
1968-69	329,312	73,671	bushels	\$	32,471	24,894	bushels	\$
1969-70	319,656	56,930	550,962	1,199,648	33,087	21,026	49,068	206,086
1970-71	313,129	56,810	429,640	1,343,708	37,441	17,848	38,307	217,525
1971-72	314,860	54,654	479,890	1,272,479	38,177	15,848	54,615	200,255
1972-73	311,714	44,034	376,461	930,645	40,797	15,304	43,337	253,088
			412,243	984,024			54,361	278,328

LEMONS AND GRAPEFRUIT—NUMBER OF TREES AND PRODUCTION

Season	Lemons (a)				Grapefruit			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
1968-69	42,764	4,488	bushels	\$	8,209	1,451	bushels	\$
1969-70	40,851	2,582	153,855	277,180	7,885	1,837	20,028	50,696
1970-71	39,331	3,133	140,527	256,033	8,230	2,468	17,378	56,291
1971-72	37,620	4,233	148,861	268,646	7,880	3,690	16,545	95,800
1972-73	36,584	5,959	132,676	275,536	7,915	6,238	17,508	58,523
			116,595	255,055			16,193	54,914

(a) Includes limes.

Stone Fruits

Plums, peaches, apricots, nectarines, cherries and loquats are grown in the hills districts in the Darling Range near Perth, in the Swan Valley and in many districts in the South-West. The total number of stone fruit trees (bearing and non-bearing) in 1972-73 was 187,805, comprising 84,396 plum trees, 65,769 peach trees, 17,985 apricot trees, 9,197 nectarine trees, 8,286 cherry trees and 2,172 loquat trees. The bulk of the stone fruit crop is consumed locally but shipments of plums are sent overseas, mainly to Singapore, Malaysia and Indonesia.

The next two tables give details of production of the principal stone fruits for the five years 1968-69 to 1972-73.

PLUMS AND PEACHES—NUMBER OF TREES AND PRODUCTION

Season	Plums and prunes				Peaches			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
1968-69	80,109	15,263	bushels	\$	65,060	11,392	bushels	\$
1969-70	78,877	11,808	100,243	531,383	60,246	8,743	112,067	406,579
1970-71	76,460	10,978	138,489	662,036	58,813	8,741	126,473	410,794
1971-72	73,432	9,978	121,309	702,455	55,139	8,790	97,166	483,149
1972-73	72,723	11,673	97,635	501,133	53,403	12,366	90,033	373,740
			146,800	759,396			106,188	369,667

APRICOTS AND NECTARINES—NUMBER OF TREES AND PRODUCTION

Season	Apricots				Nectarines			
	Number of trees		Production		Number of trees		Production	
	Bearing	Non-bearing	Quantity	Gross value	Bearing	Non-bearing	Quantity	Gross value
1968-69	20,481	4,238	bushels 35,733	\$ 152,115	7,192	1,355	bushels 13,402	\$ 79,161
1969-70	18,941	3,304	34,931	125,551	7,006	1,492	14,021	83,752
1970-71	17,892	2,838	26,228	183,873	6,410	1,751	8,381	70,065
1971-72	16,090	2,918	17,392	145,223	6,470	2,319	10,358	68,501
1972-73	15,353	2,632	25,319	136,747	6,531	2,666	14,481	86,307

Bananas

Production of bananas is confined almost entirely to a narrow strip of land along the Gascoyne River at Carnarvon. The plantations are dependent on water pumped from bores which tap a subterranean flow in the sands of the usually dry river bed. As a surface flow in the river channel results only from heavy rains, which do not occur every year, a problem is presented in the falling-off of water supplies and in the increase in the salt content of the underground water during long dry periods. These conditions and also periodic damage from cyclones cause fluctuations in the area of the plantations and in production.

The crop is transported by road to Perth and sold locally in competition with bananas imported from other Australian States.

In the following table, details are given of the area and production of bananas for the period 1968-69 to 1972-73.

BANANAS—AREA AND PRODUCTION

Season	Area		Production		
	Plants of bearing age	Young plants not bearing	Total	Average yield per hectare (a)	Gross value
	hectares	hectares	bushels	bushels	\$
1968-69	180	38	252,686	1,404	1,415,041
1969-70	189	28	255,177	1,350	2,143,489
1970-71	130	33	64,671	497	367,084
1971-72	140	28	222,728	1,591	1,432,800
1972-73	153	28	199,842	1,306	1,746,901

(a) Calculated on the area of bearing plants only.

Vineyards

Almost two-thirds of the State's 2,614 hectares of grape vines are in the Shire of Swan, other important centres being Chittering, Wanneroo, Toodyay and Gosnells.

In the dried vine fruit industry, currants are the main item of production and a high proportion of the crop is exported overseas, South Africa and Canada being the principal buyers in 1972-73. Small quantities are exported to other Australian States. Production of sultanas and table raisins is of minor importance and exports are negligible.

Table grapes are grown for the local market and for export overseas, mainly to Singapore and Malaysia. The production of beverage wines has exceeded 2·7 million litres for the past ten years, reaching a record production of over 3·6 million litres in 1968-69. Most of the wine produced is for local consumption although small amounts are exported to the other Australian States and overseas.

Details of the area of vines and the production of grapes, dried vine fruits and wine for the five years 1968-69 to 1972-73 are given in the next table.

GRAPES—AREA AND PRODUCTION

Season	Area		Grapes used for wine making and table use		Dried vine fruits		Wine production	
	Vines of bearing age	Young vines not bearing	Quantity	Gross value	Quantity	Gross value	Beverage (a)	Distillation
	hectares	hectares	tonnes	\$'000	tonnes	\$'000	litres	litres
1968-69	2,725	217	7,983	786	1,900	550	3,804,914	996,226
1969-70	2,477	215	8,445	945	1,093	337	3,497,675	1,117,529
1970-71	2,435	279	8,212	1,021	1,542	437	3,511,782	1,029,358
1971-72	2,392	333	7,328	862	1,270	376	3,266,247	520,609
1972-73	2,220	346	7,236	808	972	438	2,998,232	864,734

(a) Includes spirit produced from distillation wine and used in fortification.

Nurseries

Commercial nurseries are concentrated in the Perth Statistical Division, Kalamunda with 24 per cent of the total area of commercial nurseries being the principal centre. Most nursery production is in the form of potted shrubs, ornamental trees and cut flowers for domestic use but large numbers of fruit trees are produced for planting in orchards.

NURSERIES (a): AREA AND VALUE OF SALES (b)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Area	99 hectares	92	105	144	134
Sales (year ended 31 March)	\$ 1,137,746	1,312,132	1,467,063	1,836,029	2,274,121

(a) Excludes non-commercial nurseries.

(b) Value at the holding, after deducting costs incurred in marketing.

Artificial Fertilisers

Soils in Western Australia are acutely deficient in phosphate, and regular applications of phosphatic fertiliser are required for crop and pasture growth. Newly cleared land may require applications of up to 230 kilograms of superphosphate per hectare for satisfactory crop yields, but annual applications can be reduced as the phosphate content of the soil is improved through the residual effect of the added fertiliser. On established land, applications of 100 kilograms to 120 kilograms of superphosphate per hectare are commonly used in wheat growing.

Nitrogen deficiencies also exist in some areas. Legume pastures have assisted greatly in building up nitrogen in the soil and in some situations appreciable increases in yield may be achieved by applying forms of concentrated nitrogenous fertiliser.

The following table shows details of superphosphate and other artificial fertilisers used on crops and pastures during the years 1968-69 to 1972-73.

ARTIFICIAL FERTILISER USED ON RURAL HOLDINGS

Season	Crops					Pastures				
	Area fertilised	Quantity used				Area fertilised	Quantity used			
		Super-phosphate (a)	Other artificial fertilisers	Total	Average per hectare		Super-phosphate (a)	Other artificial fertilisers	Total	Average per hectare
1968-69	hectares	tonnes	tonnes	tonnes	tonnes	hectares	tonnes	tonnes	tonnes	tonnes
	3,828,262	522,027	79,799	601,826	0.16	5,275,813	720,148	22,555	742,703	0.14
1969-70	3,904,810	521,039	98,709	619,748	0.16	5,784,922	790,084	29,840	819,925	0.14
1970-71	3,822,127	460,826	82,290	543,115	0.14	5,033,433	678,453	28,471	706,923	0.14
1971-72	3,650,058	440,285	60,680	500,965	0.14	4,623,661	599,445	38,916	638,362	0.14
1972-73	3,746,075	457,226	65,972	523,198	0.14	5,058,630	681,217	45,065	726,281	0.14

(a) Includes superphosphate with trace elements.

PASTORAL PRODUCTION

Throughout this section, where mention is made of the 'pastoral areas' the portion of the State referred to comprises the Kimberley, Pilbara, North-West and Central Statistical Divisions together with the Shires of Boulder, Coolgardie, Laverton, Leonora and Menzies, which form part of the Eastern Goldfields Division. The balance of the State, referred to as the 'agricultural areas', comprises the Perth, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Divisions together with the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn in the Eastern Goldfields Division.

In the early days of settlement, pastoral activities in Western Australia were confined largely to what are now the agricultural areas and were usually associated with the cultivation of crops. However, beginning with Captain George Grey's visit in 1838 to the area known as the West Kimberley, explorers increasingly drew attention to the pastoral possibilities of large sections of the present Kimberley, Pilbara, North-West and Central Statistical Divisions.

In 1857 and 1858, F. T. Gregory noted the existence of good pastoral country in the Murchison and the Gascoyne districts and in the course of a journey further to the north in 1861 he discovered the Ashburton, Fortescue, De Grey and Oakover Rivers. His reports of good grazing lands in the area led to the establishment of sheep stations by pastoralists from the south, the first of such ventures, in 1863, being in the De Grey district of what is now the Pilbara Statistical Division. Graziers were also turning their attention to the south-east and in the 1870s pastoral lands were being taken up in the coastal areas to the south of the Nullarbor Plain. Another development in the extension of pastoral activity began with Alexander Forrest's journey through the Kimberley in 1879 and his favourable reports on the suitability of the country for grazing. Leases along the Fitzroy and the Ord Rivers were stocked not only with livestock shipped from the south and from the other Australian Colonies but also with cattle brought overland to the area, principally from Queensland and New South Wales, by remarkable feats of droving.

Pastoral production, comprising mainly the production of wool and meat, in 1971-72 contributed over 48 per cent of the total net value of Western Australian rural primary production.

Sheep

The following table shows the total numbers of sheep, and their distribution between the agricultural and pastoral areas, in each year from 1954 to 1973.

SHEEP NUMBERS AND DISTRIBUTION

At 31 March—	In agricultural areas		In pastoral areas		State total
	Number	Proportion of State total (per cent)	Number	Proportion of State total (per cent)	
1954	9,921,867	75·8	3,165,241	24·2	13,087,108
1955	10,273,780	76·6	3,137,502	23·4	13,411,282
1956	10,976,121	77·7	3,152,047	22·3	14,128,168
1957	11,845,409	79·6	3,041,140	20·4	14,886,549
1958	12,704,210	80·8	3,019,753	19·2	15,723,963
1959	13,070,754	80·6	3,144,490	19·4	16,215,244
1960	13,395,527	81·6	3,016,062	18·4	16,411,589
1961	13,940,614	81·3	3,210,770	18·7	17,151,384
1962	14,951,185	81·6	3,362,694	18·4	18,313,879
1963	15,403,902	82·3	3,323,222	17·7	18,727,124
1964	16,608,300	82·4	3,556,568	17·6	20,164,868
1965	18,670,759	83·4	3,721,075	16·6	22,391,834
1966	20,695,040	84·7	3,731,768	15·3	24,426,808
1967	23,525,280	86·0	3,845,106	14·0	27,370,386
1968	26,406,575	87·6	3,754,302	12·4	30,160,877
1969	28,888,450	87·8	4,012,708	12·2	32,901,158
1970	29,844,044	88·7	3,789,913	11·3	33,633,957
1971	31,129,804	89·7	3,579,044	10·3	34,708,848
1972	31,049,873	90·2	3,355,125	9·8	34,404,998
1973	27,777,077	89·8	3,142,103	10·2	30,919,180

The present distribution of sheep in the State is the result of two opposite trends operating over many years. In the pastoral, or station areas where the industry is based on long-term pastoral leases, severe droughts led to a decline in the number of sheep, although some recovery has taken place in recent years. In the agricultural, or farming areas, however, the sheep population has steadily risen. Factors contributing to this rise, particularly since the war, have been the increasing use of subterranean clover in the wheat belt, the provision in many areas of more assured water supplies, a taxation policy which, by the provision of special concessions to primary producers, has encouraged farmers to clear and develop new land, the War Service Land Settlement Scheme which developed new areas and the stimulating effect of buoyant wool prices in the post-war period.

The overall result has been a marked upward trend in sheep numbers since the war, and at 31 March 1973, the State total was 30.9 million, compared with 9.77 million at the same date in 1946. Numbers in the agricultural areas increased from 7 million, or 72 per cent of the State total, to 27.8 million or nearly 90 per cent. They also increased in the pastoral areas from 2.74 million to 3.14 million, but as a percentage of the State total this represents a decline from 28 per cent to little more than 10 per cent.

SHEEP FLOCKS AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF FLOCK

Size of holding (acres)	Size of sheep flock (numbers)										Total, all rural holdings
	1-299	300-499	500-699	700-999	1,000-1,399	1,400-1,999	2,000-2,999	3,000-4,999	5,000 and over	Total flocks	
1- 99	450	3	....	8	....	1	....	....	....	453	4,296
100- 199	266	39	....	2	....	....	....	....	1	317	1,180
200- 299	183	42	29	21	8	....	2	....	....	285	955
300- 399	139	43	41	38	10	3	....	....	....	275	791
400- 499	131	55	41	45	37	9	....	1	....	319	672
500- 599	92	40	31	46	36	24	5	....	1	275	532
600- 799	139	51	66	84	100	66	29	3	....	538	865
800- 999	93	44	52	89	98	99	76	3	....	554	764
1,000- 1,399	112	51	86	132	202	241	237	67	....	1,128	1,388
1,400- 1,999	57	44	62	163	273	344	413	273	23	1,652	1,862
2,000- 2,999	54	54	63	172	342	489	709	652	156	2,691	3,039
3,000- 4,999	76	63	97	160	288	480	762	746	390	3,062	3,711
5,000- 9,999	15	9	20	42	69	178	338	498	390	1,559	1,637
10,000-19,999	5	3	2	5	6	11	40	84	158	314	322
20,000-49,999	1	1	1	....	....	1	4	7	35	50	57
50,000 and over	8	3	4	3	10	10	21	71	263	393	521
Total	1,821	545	603	1,002	1,480	1,957	2,635	2,406	1,416	13,865	22,592

SHEEP FLOCKS AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF FLOCK AND AREA OF ESTABLISHED PASTURE

Area of established pasture (acres)	Size of sheep flock (numbers)										Total, all rural holdings
	1-299	300-499	500-699	700-999	1,000-1,399	1,400-1,999	2,000-2,999	3,000-4,999	5,000 and over	Total flocks	
Nil	233	82	116	196	223	233	223	173	291	1,770	5,651
1- 9	73	1	....	....	....	....	2	1	....	77	439
10- 19	101	....	....	1	1	1	....	....	....	104	372
20- 29	58	....	....	2	2	....	2	1	....	65	256
30- 49	93	3	3	1	1	1	1	1	....	104	416
50- 69	85	6	2	1	7	3	3	1	3	111	383
70- 99	128	14	4	2	7	3	2	1	....	161	458
100- 149	171	40	33	16	26	15	13	6	2	322	852
150- 199	130	51	29	23	14	14	9	4	1	275	715
200- 299	231	89	96	104	81	53	30	7	....	691	1,360
300- 399	147	67	79	123	88	60	32	6	1	603	1,008
400- 499	88	62	56	113	146	92	40	14	3	614	918
500- 699	123	60	85	168	310	316	182	42	6	1,292	1,611
700- 999	84	38	53	136	278	438	446	151	1	1,625	1,820
1,000-1,999	56	26	36	107	263	641	1,302	1,153	187	3,771	3,994
2,000 and over	20	6	11	9	33	87	348	845	921	2,280	2,339
Total	1,821	545	603	1,002	1,480	1,957	2,635	2,406	1,416	13,865	22,592

In the preceding tables sheep flocks at 31 March 1971, in size groups, are classified according to the size of the holding and to the area of established pasture. Of the 22,592 holdings of all types, sheep were carried on 13,865. Holdings of between 1,000 and 5,000 acres accounted for 61 per cent of the flocks and holdings which carried between 1,000 and 3,000 sheep for 44 per cent of the flocks. Of the holdings carrying sheep 12,095 or 87 per cent had some established pasture and 10,876, or 78 per cent had 200 acres and over.

An analysis of collected data relating to breeds of sheep as at 31 March 1971 showed that Merinos accounted for 92 per cent of the total. Corriedales, Polwarths and British breeds, the most important of which are Border Leicester, Dorset Horn, South Down, Suffolk and Romney Marsh, comprised 4 per cent and the remaining 4 per cent was made up of Crossbreds, including Merino Comebacks. With low wool prices operating during the ten years prior to the war, some farmers turned to the production of fat lamb carcasses for export, mainly to the United Kingdom. The industry which developed as a result was based on the use of Corriedale and British breeds of rams, which in 1971 comprised about 14 per cent of the rams in the State. As a result of the high wool prices during the Korean war the 'fat lamb' industry declined sharply in 1950-51 and 1951-52 but recovered in 1952-53. The recovery in the industry was maintained for some years and exports of lamb fluctuated between 1,850 tonnes in 1953-54 and 5,219 tonnes in 1960-61. Increased lamb production in the United Kingdom and variable market prices then led to a sharp decline in the export of lamb, the total falling to 936 tonnes in 1967-68. A recovery occurred in 1968-69 when 4,161 tonnes were exported but the amount then declined. However exports of lamb again recovered and in 1972-73 totalled 4,854 tonnes.

The following table shows the numbers of each breed of sheep in the State at 31 March 1971.

BREEDS OF SHEEP (a)

Breed	At 31 March 1971			
	Rams (one year and over)	Other sheep	Total	Number of holdings with rams (b)
Merino	401,609	31,698,273	32,099,882	10,280
Other recognised breeds—				
Border Leicester	8,826	187,663	196,489	761
Cheviot	248	1,148	1,396	34
Corriedale	15,425	655,236	670,661	748
Dorset Horn	12,898	60,752	73,650	1,247
English Leicester	257	1,713	1,970	12
Pol Dorset	2,117	10,338	12,455	152
Polwarth	4,918	173,463	178,381	267
Romney Marsh	1,895	23,416	25,311	242
Ryeland	389	1,829	2,218	42
Shropshire	293	951	1,244	23
South Down	13,195	49,644	62,839	1,067
South Suffolk	732	2,971	3,703	98
Suffolk	4,472	31,756	36,228	721
Other	39	20	59	7
Total, Other recognised breeds	65,704	1,200,900	1,266,604	(e)
Merino Comeback (e)	1,035	361,743	362,778	59
Crossbreds (d) and other mixed breeds	1,687	977,897	979,584	(e)
GRAND TOTAL	470,035	34,238,813	34,708,848	12,133

(a) Statistics collected triennially. (b) Components do not add to total because more than one breed of ram may be reported by any one holding. (c) More than one-half Merino. (d) British breed to the extent of one-half or more. (e) Not available; see footnote (b).

Wool

Total wool production in 1972-73 amounted to 148,517 tonnes, compared with 83,517 tonnes ten years earlier. Shorn wool in 1972-73 accounted for 138,201 tonnes. It was shorn from 33.6 million sheep and lambs, the average weight of wool shorn being

4.1 kg, compared with 4.4 kg in the previous season. The balance of the 1972-73 production comprised 2,448 tonnes of dead and fellmongered wool, and 7,868 tonnes of wool exported on skins.

During the war years wool was compulsorily acquired by the Australian Government in accordance with an agreement with the United Kingdom. The scheme was administered by the Central Wool Committee and the price paid was determined by a system of appraisal which, however, operated within limits agreed upon by the two Governments. During this period large stocks of wool were accumulated and after the war an organisation was formed with the object of selling this surplus with the least possible disturbance to ruling prices. Government control of wool ceased after the war and wool auctions operated by members of the National Council of Wool Selling Brokers of Australia were resumed in Perth in 1946. These sales are attended by Australian and overseas buyers who bid for individual lots. Some wool is auctioned at sales conducted independently of the National Council and a significant portion of the clip is purchased on farms by wool dealers who buy direct from producers. In September 1957, auctions were held at Albany for the first time. Sales in Perth were discontinued in 1960 and the selling centre was transferred to Fremantle.

The number of sheep and lambs shorn, the average weight of wool shorn per sheep or lamb, and production of wool for five years to 30 June 1973 are given in the following table. The succeeding table shows the gross value of wool production for the same period.

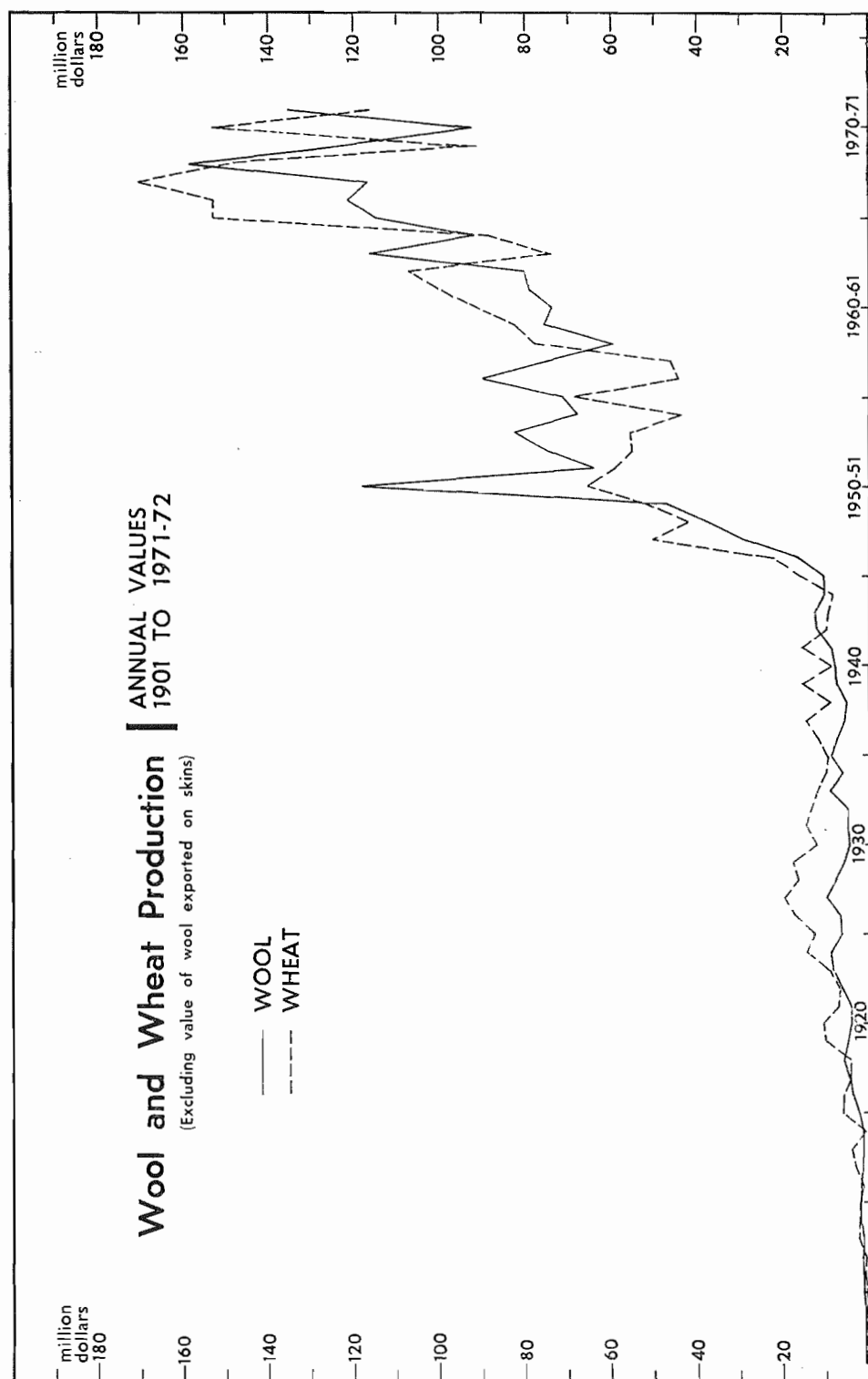
SHEEP SHORN AND WOOL PRODUCTION

Year	Sheep shorn			Average weight of wool shorn	Wool production (in the grease)			
	Sheep	Lambs	Total		Shorn	Dead and fellmongered	Exported on skins	Total
	'000	'000	'000	kg	tonnes	tonnes	tonnes	tonnes
1968-69	28,438	7,404	35,842	4.5	162,818	1,489	6,084	170,392
1969-70	28,541	6,989	35,530	4.0	143,481	1,046	7,434	151,961
1970-71	30,277	6,857	37,134	4.1	151,121	687	7,159	158,967
1971-72	30,838	7,277	38,115	4.4	168,850	1,369	7,943	178,162
1972-73	28,201	8,445	33,645	4.1	138,201	2,448	7,868	148,517

GROSS VALUES OF WOOL PRODUCTION
(\$'000)

Year	Shorn wool	Dead wool and fellmongered wool	Wool exported on skins	Total
1968-69	157,544	720	3,325	161,589
1969-70	120,266	554	4,010	124,829
1970-71	91,854	156	2,501	94,510
1971-72	134,715	422	2,132	137,269
1972-73	222,186	2,855	6,518	231,559

Although the greater proportion of the wool clip is exported in the grease, scouring, or degreasing, is done in the State and degreased wool is an appreciable item in the external wool trade. During 1971-72 exports of greasy and degreased wool were 145,803 tonnes and 13,481 tonnes respectively. The most important buyers of greasy wool were Japan, the Federal Republic of Germany, France, the Union of Soviet Socialist Republics, Italy, other Australian States, the United Kingdom and India. Principal purchasers of degreased wool were the Union of Soviet Socialist Republics, the United Kingdom, Italy, the Federal Republic of Germany, France, other Australian States and India. Further details of exports of greasy and degreased wool, both interstate and overseas, are given in Chapter IX, Part 1—*External Trade*.



Cattle

Cattle are classified according to the two main purposes of 'meat production' and 'milk production', irrespective of breed.

The table below shows the numbers of cattle for meat production kept on rural holdings at 31 March 1969 to 1973. The table on page 362 details, for the same period, the numbers kept for milk production. Cattle numbers in each State and Territory at 31 March 1973 are given in the second table on page 365.

In 1973 the Kimberley Statistical Division carried 662,819 head of cattle for meat production, or 33·1 per cent of the State total. Other pastoral areas carried 129,823 head and agricultural areas 1,211,110.

The cattle which were originally shipped or driven overland from the other Australian Colonies to start the industry in the northern pastoral areas were predominantly shorthorn breeds, and these still form the great bulk of all cattle kept for meat production in those areas. Carcass weights, however, have been increased by importing better-type bulls, by improving watering facilities on the cattle stations and by the almost complete replacement of droving by the transport of the animals from stations to abattoirs in large road trucks.

Killing and freezing works operate at the ports of Wyndham, Broome and Derby and consignments of frozen and chilled beef from these centres go mainly to overseas destinations. Some of it is sent south for consumption in the metropolitan area and live cattle are also shipped from northern ports to be slaughtered for the metropolitan market. By far the greater proportion of beef consumed in the southern part of the State, however, is supplied from the agricultural areas, some of it being from stock culled from dairy herds.

The following table shows the numbers and proportions of cattle for meat production in agricultural areas and in pastoral areas at 31 March 1969 to 1973. The agricultural areas have become an increasingly important source of meat production in recent years, and now contain more than 60 per cent of the cattle kept for this purpose.

CATTLE FOR MEAT PRODUCTION—NUMBERS AND DISTRIBUTION

Particulars	At 31 March—				
	1969	1970	1971	1972	1973
Number of head—					
In agricultural areas	660,250	737,496	861,297	1,048,830	1,211,110
In pastoral areas	703,229	761,519	741,334	751,271	792,642
Total	1,363,479	1,499,015	1,602,631	1,800,101	2,003,752
	per cent	per cent	per cent	per cent	per cent
Proportion of total—					
In agricultural areas	48·4	49·2	53·7	58·3	60·4
In pastoral areas	51·6	50·8	46·3	41·7	39·6

In the first two tables on page 360 herds of cattle kept for meat production at 31 March 1971, in size groups, are classified according to the size of the holding and the area of established pasture. Of the 22,592 rural holdings of all types, cattle for meat production were carried on 9,502. Holdings of between 1,000 and 5,000 acres accounted for 41 per cent of the herds, and holdings which carried less than fifty cattle for meat production for 52 per cent of the herds. Of the holdings carrying cattle for meat production 8,601, or 91 per cent, had some established pasture and 6,618, or 70 per cent, had 200 acres and over.

The third table on page 360 gives details of slaughterings in abattoirs, butcheries and on stations and farms. A table showing particulars of pigs slaughtered and pigmeat produced appears on page 365.

CATTLE FOR MEAT PRODUCTION AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of holding (acres)	Size of cattle herd (numbers)										Total, all rural holdings
	1-9	10-19	20-29	30-49	50-99	100-199	200-299	300-999	1,000 and over	Total herds	
1- 99	401	185	78	72	27	2	....	....	....	765	4,296
100- 199	129	105	87	157	157	16	1	....	....	652	1,180
200- 299	109	72	74	108	178	96	4	....	....	641	955
300- 399	83	46	53	73	167	123	21	....	....	566	791
400- 499	49	45	34	69	115	123	24	4	....	463	672
500- 599	42	29	22	50	84	101	34	11	....	373	532
600- 799	62	24	36	82	133	139	64	41	....	581	865
800- 999	41	23	22	49	91	111	55	39	1	432	764
1,000- 1,399	101	71	45	82	132	126	66	73	....	696	1,388
1,400- 1,999	142	78	70	111	166	122	61	70	1	821	1,862
2,000- 2,999	232	131	84	166	209	143	75	74	3	1,117	3,039
3,000- 4,999	236	141	99	175	229	182	64	96	8	1,230	3,711
5,000- 9,999	128	50	65	81	124	108	50	59	3	668	1,637
10,000-19,999	21	11	5	13	28	23	17	28	11	157	322
20,000-49,999	3	2	3	....	3	9	1	8	5	34	57
50,000 and over	13	13	10	15	29	34	22	65	105	306	521
Total	1,792	1,026	787	1,303	1,872	1,458	559	568	137	9,502	22,592

CATTLE FOR MEAT PRODUCTION AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF HERD AND AREA OF ESTABLISHED PASTURE

Area of established pasture (acres)	Size of cattle herd (numbers)										Total, all rural holdings
	1-9	10-19	20-29	30-49	50-99	100-199	200-299	300-999	1,000 and over	Total herds	
Nil	236	110	60	84	120	77	41	76	97	901	5,651
1- 9	97	6	5	1	2	1	....	....	....	112	439
10- 19	102	33	9	9	1	1	....	....	....	155	372
20- 29	49	40	13	7	4	1	....	....	....	114	256
30- 49	67	72	39	22	9	2	....	....	1	212	416
50- 69	49	53	35	52	15	3	....	....	....	208	383
70- 99	48	44	53	70	41	3	....	....	....	259	458
100- 149	86	52	61	136	139	13	1	....	2	490	852
150- 199	77	47	41	78	151	34	4	1	....	433	715
200- 299	134	75	51	114	230	172	15	1	....	792	1,360
300- 399	69	48	54	69	153	167	37	2	....	599	1,008
400- 499	59	39	36	55	114	159	42	11	....	516	918
500- 699	113	53	48	122	174	179	93	51	2	835	1,611
700- 999	138	86	63	115	146	154	86	80	....	868	1,820
1,000-1,999	307	191	137	235	342	270	137	179	4	1,802	3,994
2,000 and over	161	77	82	134	231	222	102	165	32	1,206	2,339
Total	1,792	1,026	787	1,303	1,872	1,458	559	568	137	9,502	22,592

Slaughtering

LIVESTOCK SLAUGHTERED AND MEAT PRODUCED

Year	Livestock slaughtered (a)								Meat produced (b)	
	Sheep		Lambs		Cattle		Calves		Mutton and lamb	Beef and veal
	Number	Gross value (c)	Number	Gross value (c)	Number	Gross value (c)	Number	Gross value (c)		
1968-69	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	tonnes	tonnes
1968-69	2,413	8,953	1,431	8,057	347	34,652	20	961	68,800	68,838
1969-70	3,229	10,140	1,371	8,037	384	37,425	20	875	78,047	73,056
1970-71	3,005	8,350	1,486	6,837	342	37,344	8	429	78,643	64,334
1971-72	4,219	10,318	1,898	7,463	386	42,431	5	314	105,119	77,291
1972-73	4,351	27,520	1,320	9,202	465	54,466	15	814	92,918	90,052

(a) Mainly slaughtering for human consumption but also includes small numbers of livestock slaughtered for boiling down. Details of pigs slaughtered and production of pigmeat are shown on page 365. (b) Dressed carcass weight; excludes condemned carcasses and offal. (c) Value 'on hoof' at principal market.

Beef from cattle slaughtered at Wyndham, Broome and Derby in the Kimberley Division is principally for export. The local market for meat is supplied mainly from abattoirs at Midland, Fremantle, Waroona, Harvey, Bunbury, Albany, Geraldton, Wooroloo and Kalgoorlie but most of these establishments also slaughter for the export trade. Small establishments operating in country towns also contribute substantially to total production, and most stations and many farms slaughter sufficient for all or part of their own requirements.

DAIRYING

Compared with the wheat, wool and meat producing industries, dairying as a major well-organised rural activity is of fairly recent origin. Its growth was retarded initially by the difficulty of clearing heavily-timbered country in the South-West and the need for special methods of pasture establishment, but these problems have been progressively overcome and dairying is now a significant feature of primary production, although only limited development has taken place in recent years.

Until the establishment of the first butter factory at Busselton in 1898, dairy farming in Western Australia was essentially for the production of whole milk, although small quantities of farm butter were marketed. As more factories commenced processing, the industry steadily developed and its growth was further stimulated by the establishment of irrigation areas, the first at Harvey in 1916, and by the introduction of the Group Settlement Scheme in 1921. Another important factor in increasing production was the successful establishment of subterranean clover which resulted in a marked improvement in pastures.

The industry has been assisted by the extensive experimental work carried out by the Department of Agriculture and the advisory service which it provides on all aspects of dairy farming.

Price instability has been one of the major difficulties of the industry and in 1926 the 'Paterson Plan', which was a voluntary scheme of price stabilisation, was introduced. It met with considerable success but weaknesses finally became apparent and it was abandoned in 1934 in favour of the Dairy Products Marketing Regulation Act passed by the State Parliament. On 1 April 1946, Western Australia entered the voluntary butter price equalisation scheme, operated since 1936 by the Commonwealth Dairy Produce Equalisation Committee Limited, and in January 1947 the State extended its participation to include cheese. The Committee, which comprises certain members of the State Dairy Products Boards and other persons representing the industry, enters into agreements with manufacturers to secure to them equal rates from sales of butter and also of cheese, and for this purpose may fix basic prices at which these products sold in Australia or abroad are to be taken into account. The effect is that local and export trade are distributed among manufacturers in equitable proportions. The Committee fixes basic prices and equalises returns to factories through an Equalisation Fund. In addition, subsidies provided by the Australian Government are distributed by the Committee, through factories to dairy farmers, by payments on butter and cheese manufactured. The fifth five-year stabilisation plan, which came into operation on 1 July 1972, provides a minimum bounty of \$27 million annually for the Australian industry. The actual amount of the assistance provided by the Commonwealth each year will be determined at the commencement of the year in the light of the needs of the industry and taking into account action by the States in the adoption of an effective scheme to control production. The average subsidy rates per cwt in 1972-73 were \$8.95 on butter and \$4.27 on cheese.

From 1942 until 30 June 1948, and again from 1 July 1949 to 30 June 1952, a subsidy was paid by the Australian Government on milk supplied for the manufacture of processed milk products. By means of the *Processed Milk Products Bounty Act* 1962, the Commonwealth provided for payment of a maximum amount of \$700,000 as a bounty on exports of processed milk products during the year ended 30 June 1963. For the purpose of the Act, processed milk products are goods containing butterfat and produced

from cow's milk, but excluding butter, cheese and certain other specified goods. By later amendments to the Act, bounty was continued up to a maximum of \$1,000,000 in respect of exports during 1963-64 and of \$800,000 on those for 1964-65. Subsequent amendments extend the operations of the Act until 30 June 1977, the maximum amount of bounty payable each year being maintained at \$800,000.

The following table shows the numbers of cattle kept for milk production on rural holdings at 31 March 1969 to 1973.

CATTLE FOR MILK PRODUCTION

Particulars	At 31 March—				
	1969	1970	1971	1972	1973
	number	number	number	number	number
Bulls of dairy breeds used or intended for service—					
Aged one year and over	2,739	2,666	2,627	2,580	2,689
Calves (aged under one year)	1,303	1,741	1,357	989	937
Total	4,042	4,407	3,984	3,569	3,626
Cattle used or intended for production of—					
Milk or cream for sale—					
Cows—In milk and dry	97,122	101,094	96,438	96,532	96,896
Heifers—Aged one year and over	46,369	36,530	38,841	35,706	37,175
Heifer calves—Aged under one year	27,709	33,202	32,956	33,516	35,139
Milk or cream for use on rural holdings—					
House cows and heifers	7,533	6,842	6,499	5,885	5,823
Total	178,733	177,668	174,734	171,639	175,033
Total cattle for milk production	182,775	182,075	178,718	175,208	178,659

In the next two tables herds of cattle kept for milk production at 31 March 1971, in size groups, are classified according to the size of the holding and the area of established pasture. Of the 22,592 rural holdings of all types, cattle for milk production were carried on 2,108. Holdings of between 1,000 and 5,000 acres accounted for 20 per cent of the herds but 61 per cent of these herds had less than ten head each. All holdings with less than ten head accounted for 29 per cent of the herds in the State. Of the holdings carrying cattle for milk production 1,986, or 94 per cent, had some established pasture and 1,405, or 67 per cent, had 200 acres and over.

CATTLE FOR MILK PRODUCTION (a) AT 31 MARCH 1971 CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of holding (acres)	Size of cattle herd (numbers)										Total, all rural holdings
	1-4	5-9	10-19	20-39	40-59	60-79	80-99	100-149	150 and over	Total herds	
1- 19	33	4	4	....	....	....	....	....	....	41	2,512
20- 29	15	4	2	1	....	....	....	....	....	22	550
30- 49	10	3	3	5	1	....	....	....	....	22	550
50- 69	8	1	3	4	2	....	....	....	....	18	328
70- 99	17	....	1	10	3	....	....	....	....	38	356
100- 149	22	5	8	26	19	11	9	5	5	110	648
150- 199	13	5	5	19	29	23	16	8	1	119	532
200- 299	31	8	6	24	45	66	40	58	18	296	955
300- 399	23	1	6	13	28	40	40	63	35	249	791
400- 499	14	2	4	8	26	18	24	52	49	197	672
500- 699	16	2	5	10	24	25	32	65	103	282	1,008
700- 999	43	3	8	8	9	14	15	31	72	203	1,153
1,000-1,999	34	3	4	9	5	6	3	17	34	115	1,388
1,400-1,999	41	8	3	4	4	4	....	6	23	97	1,862
2,000-4,999	154	13	2	7	2	1	1	3	22	205	6,750
5,000 and over	73	8	5	1	....	2	2	1	2	94	2,537
Total	547	70	69	149	197	214	188	310	364	2,108	22,592

(a) Excludes herds with no cattle for milk production other than house cows.

CATTLE FOR MILK PRODUCTION (a) AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF HERD AND AREA OF ESTABLISHED PASTURE

Area of established pasture (acres)	Size of cattle herd (numbers)										Total, all rural holdings
	1-4	5-9	10-19	20-39	40-59	60-79	80-99	100-149	150 and over	Total herds	
Nil	69	16	8	10	1	3	2	3	10	122	5,651
1- 9	17	1	1	.....	.....	.....	.....	.....	.....	19	439
10- 19	17	2	6	.....	.....	.....	.....	1	.....	26	372
20- 29	16	3	3	2	.....	1	.....	.....	1	27	256
30- 49	12	1	3	7	2	.....	1	.....	1	28	416
50- 69	14	3	5	9	4	3	.....	3	2	43	383
70- 99	17	5	4	24	9	5	4	3	.....	71	458
100- 149	17	3	8	34	44	24	19	7	5	161	852
150- 199	20	5	1	16	48	57	32	25	2	206	715
200- 299	42	4	4	13	40	63	63	97	29	355	1,360
300- 399	27	1	4	6	24	22	29	61	53	227	1,008
400- 499	20	.....	6	9	10	19	18	51	66	199	918
500- 699	35	6	5	4	7	8	9	38	94	206	1,611
700- 999	47	5	7	7	5	6	8	12	60	157	1,820
1,000-1,999	106	8	2	5	2	3	3	5	31	165	3,994
2,000 and over	71	7	2	3	1	.....	.....	2	10	96	2,339
Total	547	70	69	149	197	214	188	310	364	2,108	22,592

(a) Excludes herds with no cattle for milk production other than house cows.

The quantity and gross value of whole milk produced in each of the years 1968-69 to 1972-73 are given in the following table.

WHOLE MILK PRODUCTION (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Quantity '000 litres	264,681	254,002	255,839	254,682	242,205
Gross value (b) \$'000	16,697	16,255	17,766	17,862	18,482

(a) Year ended 30 June. Includes milk used for processing into butter, cheese and condensery products. Details of butter and cheese production appear in Part 2 of this Chapter.

(b) Includes subsidy paid by the Australian Government.

Pig Raising

For many years the rearing of pigs has been carried on in conjunction with the production of butterfat as cream, thus providing a practical means of using the skim milk obtained. This is now on the decline, however, owing to the current trend for whole milk to be supplied in bulk by the dairy farmers direct to processing plants. In the main, pigs are now raised on grain-growing holdings and in 1973 80 per cent of the pigs in the State were in the wheat belt. There are also a number of farmers in the districts around Perth who specialise in pig raising and in fattening for market pigs obtained from country areas.

The principal breeds in Western Australia are the Berkshire, Large White and Landrace and crosses of these breeds. Pigs are reared for bacon and ham as well as pork and, although the greater proportion of production is consumed locally, there is some export trade, mainly to other Australian States. In 1971-72 a total of 3,344,324 lb of pork was shipped interstate and 2,173,928 lb overseas, mainly to Japan, Singapore, Christmas Island (Indian Ocean), the Union of Arab Emirates and Bahrain.

In the first two tables on page 364 pig herds at 31 March 1971, in size groups, are classified according to the size of the holding and the size of the herd of cattle for milk production on the holding. Of the 22,592 rural holdings of all types, pigs were carried on 3,918. Holdings with between 1,000 and 5,000 acres of land accounted for 60 per cent of the pig herds and those which carried over fifty head for 45 per cent of the herds. Of the holdings carrying pigs 502, or 13 per cent, had some cattle for milk production and 328, or 65 per cent of those holdings, had ten or more cattle for milk production.

PIG HERDS AT 31 MARCH 1971
CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of holding (acres)	Size of pig herd (numbers)										Total, all rural holdings
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-99	100 and over	Total herds	
1- 19	15	15	9	5	7	6	6	15	24	102	2,512
20- 29	8	2	3	2	4	5	.....	4	9	37	550
30- 49	10	5	2	1	4	3	4	6	9	44	550
50- 69	2	1	5	1	1	.....	5	2	10	27	328
70- 99	8	5	5	.....	3	2	3	8	11	45	356
100- 149	9	8	9	3	7	4	5	7	15	67	648
150- 199	9	6	5	4	5	4	3	9	6	51	532
200- 299	10	6	12	4	10	14	16	25	18	115	955
300- 399	14	11	4	4	8	11	5	13	17	87	791
400- 499	12	9	10	1	10	8	3	14	8	75	672
500- 699	13	14	10	11	5	18	7	31	16	125	1,008
700- 999	20	13	11	12	28	14	17	22	35	172	1,153
1,000-1,999	28	20	25	18	24	27	24	46	36	248	1,388
1,400-1,999	33	32	32	38	57	50	44	115	85	486	1,862
2,000-4,999	84	79	89	86	167	171	119	472	344	1,611	6,750
5,000 and over	35	36	31	31	62	41	46	172	172	626	2,537
Total	310	262	262	221	402	378	307	961	815	3,918	22,592

**PIG HERDS AT 31 MARCH 1971, ACCORDING TO SIZE OF HERD
OF CATTLE FOR MILK PRODUCTION AND SIZE OF PIG HERD**

Size of herd of cattle for milk production (numbers)	Size of pig herd (numbers)										Total, all rural holdings
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-99	100 and over	Total herds	
Nil	254	224	219	193	353	325	273	851	724	3,416	20,484
1- 4	11	7	13	10	17	13	7	34	40	152	547
5- 9	6	2	2	.....	3	4	1	2	2	22	70
10- 14	2	.....	1	2	2	3	.....	1	1	12	41
15- 19 .....	.....	.....	2	1	.....	1	1	2	2	9	28
20- 29	3	2	2	1	.....	4	3	1	1	17	74
30- 39	3	2	2	2	2	4	1	2	2	20	75
40- 49	1	4	2	2	2	2	2	2	.....	20	91
50- 59	5	6	4	2	1	4	3	5	3	33	106
60- 69	4	5	3	.....	3	3	3	9	1	31	108
70- 79	5	2	4	3	3	1	1	9	1	29	106
80- 89	6	3	4	2	4	.....	3	5	2	29	101
90- 99	2	.....	1	.....	2	1	.....	5	6	17	87
100-149	6	4	2	1	5	8	6	20	14	66	310
150-199	1	.....	1	1	2	5	3	10	10	33	158
200 and over	1	1	.....	1	.....	.....	.....	3	6	12	206
Total	310	262	262	221	402	378	307	961	815	3,918	22,592

In the table below, the numbers of pigs on rural holdings at 31 March are shown for each of the years 1969 to 1973. The number of pigs at 31 March 1973 was 476,316, compared with 277,501 at 31 March 1971, an increase of 72 per cent in two years.

PIG NUMBERS

At 31 March—	Boars	Breeding Sows	Other pigs (a)		Total
			Under six months	Six months and over	
1969	4,076	32,143	183,568		219,787
1970	4,174	34,645	211,232		250,051
1971	4,440	41,925	166,697	64,439	277,501
1972	6,213	62,616	269,887	88,345	427,061
1973	5,969	58,476	285,562	126,309	476,316

(a) Includes baconers, porkers, suckers, weaners and slips, for which separate age details were not collected prior to 1971.

The next table shows the numbers and gross value of pigs slaughtered in each of the years 1968-69 to 1972-73, together with the quantity of meat produced. Factory production of bacon and ham is also shown.

PIGS SLAUGHTERED (a) AND MEAT PRODUCED

Year	Pigs slaughtered		Pigmeat produced (c)	Bacon and ham produced (d)
	Number	Gross value (b)		
		\$'000	tonnes	tonnes
1968-69	263,774	7,407	14,231	4,310
1969-70	317,188	8,813	16,986	4,519
1970-71	317,906	8,612	16,734	4,863
1971-72	368,574	10,051	19,962	5,116
1972-73	541,702	14,726	30,359	5,211

(a) Comprises slaughtering in abattoirs, butcheries and on stations and farms.

(b) Value 'on hoof' at principal market

or at factory door.

(c) Dressed carcass weight; excludes condemned carcasses and offal but includes quantities used to produce bacon and ham.

(d) Factory production.

LIVESTOCK IN AUSTRALIA

The following table gives details of livestock numbers in each State and Territory of Australia at 31 March 1973.

LIVESTOCK NUMBERS AT 31 MARCH 1973—AUSTRALIA
(Thousands)

State or Territory	Sheep	Cattle				Pigs
		Bulls (1 year and over) used or intended for service	For production of milk or cream	Mainly for meat production	Total	
New South Wales	52,037	136	740	7,043	7,919	1,065
Victoria	24,186	107	1,951	3,435	5,493	583
Queensland	13,346	186	593	9,017	9,795	542
South Australia	15,651	32	221	1,330	1,583	499
Western Australia	30,919	41	175	1,967	2,182	476
Tasmania	3,824	15	236	650	900	85
Northern Territory	3	34	(a)	1,203	1,237	7
Australian Capital Territory	143	(a)	2	17	19	(a)
Australia	140,109	550	3,918	24,662	29,130	3,257

(a) Less than 500.

POULTRY FARMING

Poultry farming in Western Australia is now mainly a specialist industry and a large proportion of the egg production is on holdings which carry sufficient birds to make the activity the sole or predominant source of income. Most of the commercial poultry farms are situated in the Perth Statistical Division, within a thirty-mile radius of Perth, but birds are also kept for commercial production on orchards, dairy farms and wheat farms throughout the agricultural areas.

On specialist poultry farms modern developments in breeding, sexing and nutrition have resulted in considerably higher egg production per bird. Egg-producing birds are largely first-cross hens, bred mainly from White Leghorn cocks and Australorp hens. Production of poultry meat has increased considerably in recent years. It is now predominantly a specialised industry using strains of birds which have been developed specifically for meat production.

Under the *Marketing of Eggs Act, 1945-1970*, all producers in the South-West Land Division are required to market their eggs either through the Western Australian Egg Marketing Board or under the permit system which is administered by the Board. The principal purpose of this legislation is to ensure satisfactory disposal of eggs, including that surplus over local requirements which is consistently produced and which must be sold overseas at prices which usually do not offer a reasonable return to the producer. In order to provide a fund with which to equalise returns from local and export sales the

Board, prior to 1 July 1965, made a charge on all eggs sold locally. This charge was subsequently replaced by a levy imposed by Commonwealth legislation which came into operation on 1 July 1965.

The *Poultry Industry Levy Act* 1965-1966 provides for the imposition throughout Australia of a levy on hens not less than six months old kept for commercial purposes. Special exemptions are made in respect of 'broiler breeder hens', being hens used to produce chickens for table purposes. The levy, which does not apply to flocks of fewer than twenty-one hens, nor to the first twenty hens in any flock, is payable fortnightly and may not exceed \$1 annually per bird. In June 1974 the levy stood at 4c per fortnight for each hen.

Under the *Poultry Industry Levy Collection Act* 1965-1966 the authority responsible for the collection of the levy in this State is the Western Australian Egg Marketing Board. The *Poultry Industry Assistance Act* 1965-1966 establishes a Poultry Industry Trust Fund for the receipt of the amount of the levy and other moneys. The Act provides for payment from the Fund to a State, by way of financial assistance, of such amounts as the Commonwealth Minister may determine upon the recommendation of The Council of Egg Marketing Authorities of Australia.

Although the Commonwealth levy replaces the egg equalisation levies formerly imposed by the several State authorities for the purpose of equalising returns from local markets and export sales, the State authorities continue to make charges necessary to defray the costs of handling, grading and marketing of eggs.

In 1971-72 Kuwait, the Union of Arab Emirates, Bahrain, the United Kingdom and Oman were the most important overseas market for eggs in the shell. Exports of egg pulp in 1971-72 were valued at \$277,562.

POULTRY NUMBERS

At 31 March—						Fowls	Ducks	Turkeys
1969	....	....	....	....	....	3,299,907	22,078	21,399
1970	....	....	....	....	....	3,230,492	28,005	22,550
1971	....	....	....	....	....	3,591,548	34,679	28,575
1972	....	....	....	....	....	3,517,749	46,359	7,190
1973	....	....	....	....	....	3,657,104	55,411	6,547

EGGS SOLD AND POULTRY SLAUGHTERED (a) FOR TABLE PURPOSES

Year ended 31 March—						Eggs sold (b)		Poultry slaughtered for table purposes (c)	
						Quantity	Gross value	Dressed weight	Gross value
						'000 dozen	\$'000	tonnes	\$'000
1969	....	....	....	....	....	11,708	5,785	10,275	*6,181
1970	....	....	....	....	....	12,188	6,253	10,735	*6,519
1971	....	....	....	....	....	13,749	6,724	12,924	*7,584
1972	....	....	....	....	....	17,302	7,990	14,607	7,951
1973	....	....	....	....	....	14,919	7,251	14,065	7,523

(a) Excludes non-commercial production. (b) Figures shown were supplied by the Western Australian Egg Marketing Board. (c) Year ended 30 June. * Revised.

BEE KEEPING

Commercial producers of honey in Western Australia may be divided into three categories. There are a comparatively small number of specialist apiarists, engaged solely or mainly in honey production, who operate on a large scale and transport their hives from district to district. There are also some substantial producers who are engaged in agricultural activities and use their farms as a central site from which they may transport their hives to other areas as necessary. Finally there are the many farmers and orchardists who keep a few hives and produce honey as a minor supplementary activity. This pattern of production is illustrated by the following table.

BEE KEEPERS, BEEHIVES AND HONEY PRODUCTION (a)—1972-73

Classification of hives (a)	Bee keepers (b)		Productive beehives (c)		Honey production	
	Number	Proportion of total (per cent)	Number	Proportion of total (per cent)	Quantity	Proportion of total (per cent)
5- 19	164	42.93	758	2.17	kg 14,419	0.64
20- 49	92	24.08	1,878	5.39	49,994	2.23
50- 99	29	7.59	1,525	4.37	45,442	2.03
100-199	32	8.38	3,293	9.45	138,902	6.19
200-299	17	4.45	3,221	9.24	152,978	6.82
300-499	24	6.28	8,106	23.25	601,708	26.82
500-799	18	4.71	9,083	26.05	708,136	31.56
800 and over	6	1.57	6,998	20.07	531,848	23.71
Total	382	100.00	34,862	100.00	2,243,427	100.00

(a) Excludes details of bee keepers with less than 5 hives. (b) At 30 June 1973. (c) Represents the number of hives at 30 June 1973 from which honey was taken during the year and excludes hives kept for production but from which no honey was taken, nuclei, pollination hives, etc.

In 1972-73 exports of honey totalled 1,659 tonnes, the export value being \$1,007,009. The principal buyers were the United Kingdom, which purchased 1,170 tonnes; Malaysia, 106 tonnes; and Singapore, 98 tonnes.

BEEHIVES AND PRODUCTION OF HONEY AND BEES-WAX (a)

Year	Beehives (b)		Honey production		Bees-wax production	
	Productive (c)	Unproductive (d)	Quantity	Gross value	Quantity	Gross value
	number	number	tonnes	\$'000	tonnes	\$'000
1968-69	35,394	10,299	2,972	491	43	51
1969-70	37,156	7,920	3,361	600	45	58
1970-71	32,648	10,868	(e) 1,372	266	24	29
1971-72	33,537	8,502	2,772	685	39	44
1972-73	34,862	5,712	2,243	1,009	31	36

(a) Excludes particulars of bee keepers with less than 5 hives. (b) Number at 30 June. (c) Hives from which honey was taken during the year. (d) Includes hives kept for production but from which no honey was taken during the year, nuclei, pollination hives, etc. (e) Lowest recorded since 1954-55.

THE DEPARTMENT OF AGRICULTURE

Brief references have been made earlier in this Part to the important services rendered to rural producers by the Department of Agriculture. The Department is the branch of the State Government Service responsible for bringing scientific advice to farmers and pastoralists, for carrying out research into a wide range of technical problems and for administering Acts of Parliament dealing with agricultural and pastoral matters. Its activities can be classified under the four headings: investigation or research; advisory, now more commonly called 'extension' functions; provision of certain services for the assistance of the man on the land; and regulatory work which consists of carrying out the provisions of some of the laws relating to agriculture.

The operations of the Department are organised under a series of Divisions and Branches, the heads of which are responsible to the Director of Agriculture. The Divisions are Animal (including Animal Health and Nutrition Laboratory and sections for Veterinary Services, Animal Husbandry, Apiculture, Poultry and Brands), Wheat and Sheep (including the Cereal Products, Fleece Testing Laboratories and Plant Breeding), Dairying, Horticulture (covering Fruit, Viticulture and Vegetables), Soils (including Soil Conservation, Irrigation and Range Land Management), Plant Research and Biological Services (including Plant Pathology, Entomology, Botany, Seed Certification and Weed Con-

trol). In addition there are separate sections covering Rural Economics and Marketing, Information, Abattoirs and Library and close liaison is maintained with the Agriculture Protection Board.

Sections of government administration known as Departments of Agriculture usually originated in the demands of farmers for government assistance in coping with their technical problems. The Western Australian Department of Agriculture had its origin in a Bureau of Agriculture which was formed in 1894. In 1898 the Department of Agriculture was established and absorbed the staff of the Bureau. Up to this time, some seventy years after the first settlement, agriculture in Western Australia had made little progress. The area of cleared arable land was less than 1 per cent of the present area. Superphosphate had not been used on Western Australian farms and wheat varieties suitable for the drier districts to the east of Northam were not then available. There was little comprehension of the many problems associated with land development and not much public appreciation of the part that science might play in solving them.

From small beginnings the Department's responsibilities and activities extended as agriculture developed. In the first quarter of a century of its existence, expansion and consolidation of farming in the wheat belt overshadowed other activities. That was only natural, as the area of wheat for grain expanded from 30,000 hectares in 1900 to more than 1.6 million hectares in 1930, and for much of that time the States' development was synonymous with wheat belt expansion.

State Farms and Research Stations

Perhaps the most important work in the Department's first ten or fifteen years was that concerned with the establishment of experiment farms, or 'State farms' as they were at first called. The first of these had its origin in plots which were established at Hamel in 1896. Valuable work was carried on at this centre for nearly twenty years in connection with the growing of potatoes, fruit, cereals, hops, fodder crops and pasture, and some success was achieved with wheat breeding.

Government farms were opened at Narrogin in 1901 and at Nabawa, twenty-five miles north of Geraldton, in 1902. In 1907 a farm at Nangeenan, near Merredin, was taken over from the Lands Department and is now the Merredin Research Station. In the same year a farm was established in the South-West at Brunswick in order to provide object lessons in dairying, as it was felt that there were great possibilities of expanding the dairying industry. After functioning for several years this farm was closed and the land was subsequently used for closer settlement purposes.

In 1911 a change was made in the policy of the government farms in the wheat belt and their character changed from 'experimental' to 'experiment' farms and ultimately to 'research stations'. Instead of being conducted mainly with the object of producing revenue they were to be used primarily for collecting information concerning local conditions that would be of value to the district. In addition, wheat, oats and barley were bred and pure pedigree seed produced. It would be difficult to over-estimate the subsequent value of the farms in this new role, which is still an important function although the emphasis has now changed to complex experiments which are of value to the study of farms as economic units. In later years more research stations were established and they now number twenty-two.

Research stations at Nabawa, Badgingarra, Wongan Hills, Merredin, Beverley, Mount Barker, Newdegate, Salmon Gums and Esperance deal with agriculture in the cereal-growing and sheep-raising districts and stations at Bramley (though dealing mainly with beef cattle), Denmark and Wokalup serve the dairying districts. Vegetable research stations are situated at Medina and Manjimup, a pig research unit has been established at the Medina station and beef cattle research is taking place at the Northam Research Station. The poultry industry is served by a station at Herdsman Lake. A viticultural research station has been established at Upper Swan and a horticultural research station at Stoneville in the Darling Range to the east of Perth.

The Kimberley Research Station, operated in conjunction with the Commonwealth Scientific and Industrial Research Organization, is concerned with problems of irrigation

in relation to agriculture in the tropics, with particular reference to the agricultural settlement now taking place on the Ord River. The Fitzroy Pastoral Research Station in West Kimberley studies problems of the beef cattle industry while at Abydos, near Port Hedland, regeneration of overgrazed pastoral country and a study of sheep breeding problems are the main concerns. At the Gascoyne Research Station at Carnarvon, problems of growing tropical fruits and winter vegetables, and pastoral problems in the area are being investigated.

Advisory Services

Extension work is perhaps the Department's most important function and has exercised a powerful influence in publicising and accelerating the adoption of better farming methods. It is difficult to assess the results of any educational undertaking in terms of money, but the desirability of having a well-informed farming community, receptive to new ideas, is obvious. Although the best method of taking advice to farmers is for the technical officer to visit farms for discussion with the farmer on his own property, this is unfortunately not always possible as an officer may have between 500 and 1,000 farms in his district. Individual visits often have to be restricted to cases where a specific request has been made or where some urgent action is required.

Extension officers support the formation of farmers' organisations and attend meetings and field days where talks can be given to groups of farmers. Organised group discussions on major problems such as farm management are now a particular feature. It is estimated that in the past year approximately 8,000 farmers attended nearly 160 field days with which the Department was associated. Field experiments, both at the stations and on farmers' properties, form an excellent basis for demonstrations and talks. The various competitions in which extension officers act as judges provide another means of bringing farmers together for discussion. These competitions are generally concerned with crops and pastures but may include other types such as those conducted by Junior Farmers' Clubs for show exhibits and for debates. Extensive use is made of the radio and between 200 and 300 broadcasts are given by departmental officers each year. In addition to a weekly press service a series of television programmes is also prepared. The Department produces several publications including a quarterly *Journal of Agriculture*, which has a circulation of about 20,000, a special quarterly publication for dairy farmers and bulletins covering a wide range of subjects.

Advisory work is not concentrated in a single Division but is carried out by several Divisions and Branches of the Department. To provide local services for farmers, groups of officers are stationed at Albany, Bridgetown, Bunbury, Busselton, Carnarvon, Denmark, Derby, Esperance, Fremantle, Geraldton, Harvey, Jerramungup, Kalgoorlie, Katanning, Kelmscott, Kununurra, Lake Grace, Manjimup, Meekatharra, Merredin, Midland, Moora, Narrogin, Northam and Three Springs.

Research Activities

In the field of investigation and research, problems which have been dealt with would comprise a lengthy list and only a few of the more important can be mentioned here. The value to the State of cereal-breeding activities is well known. Cereal varieties produced by the Department have increased the income of farmers by many millions of dollars over the years in which they have been grown. The introduction of new plant species and varieties, the evaluation of their suitability for local conditions and the determination of rotations for improving yields and maintaining soil fertility are important features of the work in cereal-growing districts.

Research into plant diseases and deficiencies forms another important section of the Department's investigational work. Considerable success has been achieved in the recognition and remedying of deficiencies of trace elements in soils, notably of copper, zinc and molybdenum. As a result of this work, fertilisers containing trace elements have been applied in recent years to extensive areas of the State's farming land. These investigations, together with allied work on superphosphate and sulphur and the estab-

lishment of subterranean clover pastures, constitute the technical factors which have made possible the rapid post-war expansion of light land development.

In the pastoral areas of the North-West the sheep-carrying capacity of large tracts of country has been seriously reduced by drought and overgrazing. Recent work by officers of the Department has shown that much of this country can be reclaimed by adopting systems of grazing management different from those employed in the past.

Nutritional disorders and diseases of farm animals cause considerable loss to farmers and pastoralists. Some of the Department's most notable successes have been achieved when dealing with problems in this field, which include enzootic ataxia, enterotoxaemia, toxic paralysis, clover disease in sheep, copper and cobalt deficiencies in cattle, contagious pleuro-pneumonia, Kimberley horse disease, plant poisoning of stock and infertility in dairy cows. Problems of sheep infertility, of lupinosis, brucellosis in beef herds and of mastitis in dairy cows are among investigations at present in progress.

A soil conservation service was established in the Department in 1947. Since then a great deal of information about the incidence and nature of erosion has been collected and many farmers have been assisted with their erosion problems. Considerable attention has also been given to the salt-land problem in the agricultural districts.

In somewhat more restricted fields the development of nematode resistant rootstocks and the use of a hormone spray instead of cincturing, for currant vines, are noteworthy changes in agricultural practice resulting from investigations by the Department. The selection of the rust-resistant runner bean variety, 'Westralia', has greatly reduced one of the hazards with which the bean grower has to contend.

Agriculture Protection

For the control, prevention and eradication of noxious weeds and vermin, there is an Agriculture Protection Board which operates in collaboration with the Department of Agriculture.

The Board, which was established in 1951 following recommendations by a Royal Commission, is constituted under the provisions of the *Agriculture Protection Board Act, 1950-1970*, and comprises the Director of Agriculture or his deputy, as Chairman; the Chief Vermin Control Officer; an officer of the State Treasury; two representatives of the agricultural industry; one representative of the pastoral industry; and five representatives of local government authorities.

The income of the Board consists of appropriations from the Consolidated Revenue Fund and other moneys as prescribed by the Agriculture Protection Board Act.

For the purposes of the Agriculture Protection Board Act, the term 'noxious weeds' means those plants which are so proclaimed or declared under the *Noxious Weeds Act, 1950-1973*. 'Vermin' means any animal, bird or insect proclaimed to be vermin as provided by the *Vermin Act, 1918-1973*, and includes rabbits, foxes, dingoes, sparrows, emus, starlings and grasshoppers.

The Board formulates policies for the control, prevention and eradication of noxious weeds and vermin, advises on methods, directs and assists in general operations, provides services to help local government authorities and landholders in destruction work and conducts scientific research and investigations for the improvement of control techniques and policies. Control work extends to Crown lands, including reserves, for the benefit of adjoining landholders.

Improvements in the control of both noxious weeds and vermin have resulted from the activities of the Agriculture Protection Board and there have been some notable successes, including a great reduction in rabbit numbers effected by the use of myxomatosis virus and by organised drives for their destruction, mainly by poisoning.

Other Services

The Department operates certain services which assist the producer to increase his efficiency. Probably the best known is the production of pure pedigree varieties of seed wheat, oats and barley. These are of value to the cereal grower, who is able to obtain

his requirements at moderate cost. Sponsoring and supervising the production of approved lines of seed, notably potatoes and beans, has led to the wide use of these specialised lines with a resulting increased yield, and certification of pure lines of pasture seed gives farmers a guarantee of quality in the seed they buy. Assistance to dairy farmers to form herd-testing units, thus enabling them to gauge the performance of their herds, is another service of similar nature. Assistance and technical advice is given to farmers concerned with the installation of irrigation schemes and the preparation of land for irrigation.

The producers who benefit from the services mentioned in this section pay something for them, but not necessarily the full amount of the cost of providing these services.

Administration of Acts

The Department of Agriculture is responsible for administering some fifty Acts concerning a wide range of subjects. Some of the more important relate to animal and plant diseases and insect pests, industry trust funds, soil conservation, vermin control, marketing of agricultural products and registration of feeding stuffs, fertilisers and stock brands.

ARTIFICIAL BREEDING BOARD

The Artificial Breeding Board was established under the *Artificial Breeding Board Act, 1965* which came into operation by proclamation on 16 December 1966. The Act provides that the board shall consist of a chairman, vice-chairman and three other members, of whom one shall be a veterinary surgeon. Responsibility for promotion of artificial breeding of stock has been placed in the hands of the Board which also assumed control of artificial insemination work established in 1956 by the Department of Agriculture at the Wokalup Research Station.

Subsequent developments have been the importation of bovine semen of principal beef and dairy breeds from overseas; extension of in-store semen stocks to provide a range of sires for these breeds; wide extension of serviced areas; organisation of individual beef artificial insemination operations in other areas; extension of equipment supply services; and co-ordination of practices with parallel organisations through the Australian Association of Artificial Breeders.

Artificial insemination continues to gain increased support as a means of expanding genetic selection. The high degree of efficiency achieved since 1968, the first full year of operation, was maintained in 1972 with an average non-return rate of 72·3 per cent.

FARM MANAGEMENT SERVICE LABORATORY

The University of Western Australia, by resolution of the Senate, approved the establishment of the Farm Management Service Laboratory within the University in 1966. The aims of the Laboratory are to develop concepts and services in management accounting, planning and animal breeding which are specially suited to the needs of farmers; to make these developments available to farmers; and to use information processed by the Laboratory for teaching and research within the Institute of Agriculture at the University of Western Australia.

The Laboratory hires its own staff and computer time, and pays its own operating expenses. Fees are charged to cover costs, though initially the Laboratory drew on capital grants made to it by various firms and institutions through the John Thomson Agricultural Economics Centre at the Institute of Agriculture.

Services provided by the Laboratory include computer techniques for planning farm business and solving farm problems. A set of programmes has been developed to enable farmers to breed at least cost for maximum genetic improvement of economically important traits in sheep flocks and pig and beef herds.

HUNTING

Although hunting has been carried on from the first years of settlement, it has never been an important industry. In 1971-72 the recorded gross value was only \$838,000 but reliable and complete information is difficult to obtain and this amount could therefore be deficient.

Kangaroos have been destroyed in great numbers from the earliest days, the principal reason for the organised destruction being the damage done to pastures and fencing. As early as 1849 the export of kangaroo skins for the year was no less than 12,387. The export of kangaroo products was banned by the Australian Government in 1973 but some skins are used in local factories while kangaroo meat is used as pet food.

The earliest recorded export of rabbit skins relates to the year 1900 and the meat and skins of these animals have been a source of income to trappers ever since. In an attempt to reduce the damage done to crops and pastures, various methods of control have been adopted and since the second World War an intensive campaign, using myxomatosis virus, poisons and warren ripping, has met with considerable success. As a result, the quantity of rabbit meat produced and the number of skins exported and treated locally have declined greatly and are now insignificant.

Wild goats are slaughtered and the meat is exported.

The skins of animals other than marsupials and rabbits, together with exports of Western Australian fauna, are taken into account in the value of the hunting industry (see tables on page 335) but these are not significant.

FORESTRY

The Prime Indigenous Forests

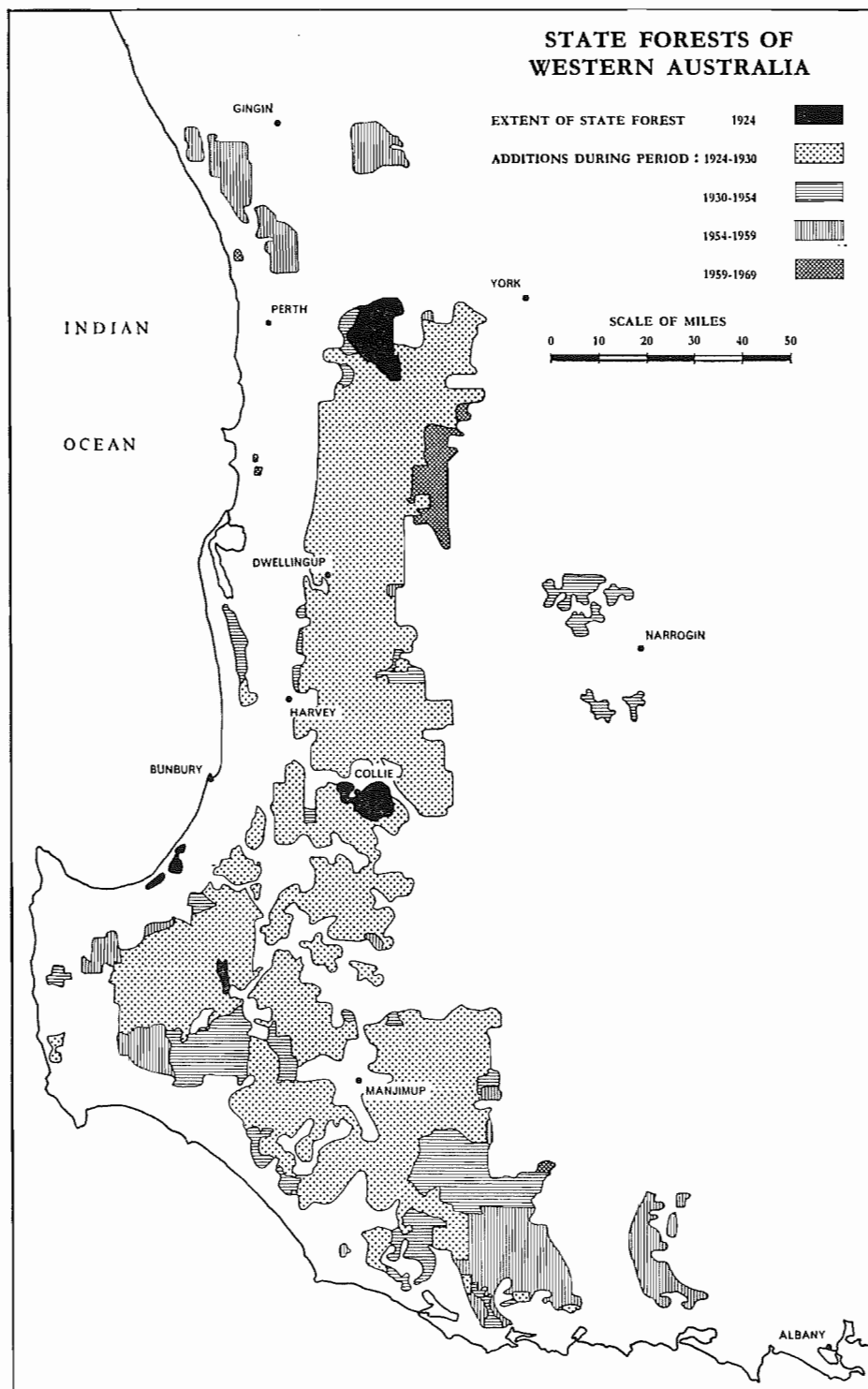
Although the prime indigenous forests of Western Australia cover only a small percentage of the area of the State, they are of considerable economic importance. This is not only on account of the durability, strength and general-purpose nature of their hardwood timbers, but also because of their occurrence in the water catchment areas in the high-rainfall and closely-populated section of the State. Being easy to regenerate after cutting, they form a natural and effective protection against soil erosion and provide for the increasing public demand for forest recreation. More than 1·8 million hectares have been permanently dedicated as State Forests and approximately 122,800 hectares of forest land are held as Timber Reserves under the Forests Act and the Land Act.

Jarrah (*Eucalyptus marginata*) is the State's principal timber and the prime forest covers over 1·2 million hectares of the State Forests. Karri (*E. diversicolor*) is next in importance and is distributed over some 323,700 hectares but only about 20 per cent of it is in pure stands. Wandoo (*E. redunca* var. *elata*) accounts for a smaller portion of the dedicated area and Tuart (*E. gomphocephala*), another valuable timber, has a restricted area of about 2,400 hectares. Blackbutt (*E. patens*) occurs in patches throughout the jarrah and karri forests and is an important milling timber with properties and uses similar to jarrah. Marri (*E. calophylla*), the most widespread of the commercial eucalypts, has been widely used as a pole timber and, to a limited extent, for building scantling. Of greatest importance, however, is the potential use of Marri as principal raw material for a proposed export wood chip industry based on the Manjimup region.

Other eucalypts and many trees of different genera occur within the prime forest belt but they are not of major economic importance. The main distribution of the prime forests, which are practically confined to the south-western portion of the State, is shown on the accompanying map.

The Inland Forests

Beyond the area of prime forest is an inland sclerophyllous woodland, within which are a number of eucalypts (both tree and mallee form), as well as several types of *Acacia*, such as the wattles and mulgas, tea tree (*Melaleuca* spp.) and casuarinas. Sandalwood (*Santalum spicatum*), indigenous to the wheat belt and semi-arid areas of the State, is still exported to Asian countries but is now obtained only from the semi-arid regions.



While none of the inland woodland can be classed as suitable for sawmilling in the ordinary sense, it forms an important source of timber for mining and agricultural purposes. During recent years, soil conservation in the regions of low rainfall has received increasing attention and the importance of controlling clearing, grazing and firewood cutting has been recognised. The Forests Department maintains a staff to exercise these controls and to advise on tree planting. Work is proceeding with demarcation of areas representing important inland ecotypes for which long-term conservation proposals have been prepared.

Forestry Administration

Scientific forestry was given considerable impetus in Western Australia with the passing of the Forests Act in 1918. Extensive cutting over the previous fifty years had seriously depleted the State's timber resources and adequate provision had not been made for protection and regeneration. Under the Act, however, wide powers are conferred on the Forests Department, which is granted nine-tenths of the net annual government revenue from forestry sources. The sum received, together with various other grants, is used for regeneration, fire control and associated purposes.

The forests are now managed on a long-range working plan to ensure continuity of the industry, trees being approved for cutting and marked accordingly by trained foresters, who work under the direction of the Conservator of Forests and closely control both the indigenous forest and the mallet and pine plantations. The future productivity of the forests is also safeguarded by ensuring that cutting is carried out in such a way as to protect immature growth and to encourage natural regeneration, which is a very important feature of the Department's policy.

Brown Mallet (*Eucalyptus astringens*), the bark of which has a high tannin content, once covered large areas in the wandoo forest belt but was practically exterminated by clearing for farms and by excessive exploitation. Regenerated areas and plantations of mallet now total 7,735 hectares and it is unlikely that this total area will increase.

Plantation methods are being employed to grow pines, principally *Pinus pinaster* and *Pinus radiata*, as the State has no indigenous softwoods of commercial significance. Financial assistance granted by the Australian Government in terms of the *Softwood Forestry Agreements Act* 1967 has enabled the State to increase its planting rate to an average 2,400 hectares per annum. It was hoped to lift the rate to 3,200 hectares a year but lack of finance has prevented this. Further financial assistance has been granted by the Australian Government under the *Softwood Forestry Agreements Act* 1972 to cover a second five-year programme of softwood planting over the period ending 30 June 1976. Thirteen plantations, with a planted area (including trial plots) of 32,922 hectares have been established to 31 December 1972, and it is planned to provide at least 120,000 hectares by the turn of the century. Much of the land selected for pine planting is of limited value for agriculture but when used for pines it constitutes a valuable long-term investment, with the prospective development of industries for the manufacture of paper, wallboard and similar products.

Because of the hot, dry summers experienced in most of the areas covered by State Forests, there is a considerable risk of damage by fire and intensive precautions are taken by the Department to minimise this danger. Look-out towers, provided with radio or telephone communication, are manned at strategic points and prescribed burning is carried out annually during spring and, to a lesser extent, in autumn. In 1973, 305,260 hectares were burnt in this way. About half the burning is carried out by dropping incendiaries from a low-flying aircraft. Restrictions are placed on all burning operations by farmers and other persons when the fire hazard is high and at such times warnings are issued emphasising the danger. All staff and employees of the Department are available and trained to fill roles in either direct fire fighting or technical support. Fire suppression is planned on the basis of rapid attack with adequate crews for achieving early control.

In association with the system of cutting control, various royalties, licence and permit fees are collected as part of the Consolidated Revenue of the State.

The protection of native flora is also vested with the Forests Department which administers the *Native Flora Protection Act, 1935-1938*. The main provision of the Act is the

authority given to the Governor of Western Australia to declare by proclamation that any or all wildflowers or native plants are protected in any specified part of the State.

Penalties are provided under the Act for picking protected wildflowers or plants or for selling or offering them for sale. The Act, however, empowers the Minister for Forests to issue licences to pick protected wildflowers or native plants for scientific or other purposes approved by the Minister.

Prior to 1963, only certain wildflowers and native plants were declared protected in various parts of the State. However, owing to extensive land-clearing operations and the consequent rapid decline in areas of wildflowers, it was decided in 1963 to issue a proclamation protecting all wildflowers and native plants on all Crown lands, State Forests, lands reserved for public purposes, and every road within the South-West and Eucla Land Divisions and on all flora and fauna reserves throughout the rest of the State. Further proclamations have since been issued protecting specific wildflowers and plants throughout Western Australia.

Policing of the Act is carried out by officers of the Forests Department and Honorary Inspectors appointed under the *Native Flora Protection Act, 1935-1938*. Notices prohibiting the picking of wildflowers are supplied by the Forests Department to Shire Councils for erection on road verges.

Principal Forest Products

Sawn timber from jarrah and karri is the principal form of forest production, but there has been a rapid increase in the local use of logs for plywood manufacture during recent years. Karri and locally-grown pine logs are used for this purpose, together with imported logs. Small-size thinnings from coastal plantations of *Pinus pinaster*, supplemented by some *Pinus radiata* thinnings from southern plantations and waste cores and off-cuts from plywood peeling, are used in the manufacture of particle board. This is becoming an increasingly important product and the volume of chipwood logs used in 1972-73 was 45,834 cubic metres.

In addition to these major products, the State's forest wealth includes sandalwood for export and as a source of sandalwood oil, firewood for general purposes, and various seeds and plants for propagation both in Australia and abroad. Wandoo and jarrah are used as a source of charcoal for the high-grade charcoal pig-iron produced at Wundowie. The karri, wandoo, marri and some inland species are important nectar producers for apiarists, who move their bees to various forest sites in following the nectar flow.

The following table gives details of sawn and round timber production from 1968-69 to 1972-73. Production of sawn timber has fluctuated over the ten years to 1972-73, reaching a maximum of 499,618 cubic metres in 1967-68, with a minimum of 404,949 cubic metres in 1972-73. In the same period the output of round timber, which consists mainly of mining timber, piles, poles, fencing posts and rails, ranged between a maximum of 89,431 cubic metres in 1968-69 and a minimum in 1971-72 of 43,776 cubic metres.

TIMBER PRODUCTION (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Timber—Sawn cubic metres	444,325	450,345	448,976	406,995	404,955
Timber—Round cubic metres	89,431	60,370	51,202	43,776	45,107

(a) From local logs and includes railway sleepers and plywood veneers.

Sawmilling is dealt with in greater detail under *Secondary Industry* in Part 2 of this Chapter.

In 1972-73 exports of railway sleepers totalled 37,672 cubic metres, of which 7,313 went to other Australian States and 30,359 to overseas markets, mainly the United Kingdom. In the same year 71,558 cubic metres of other rough, sawn or dressed timber were exported to other Australian States, and 11,559 shipped overseas, the principal markets being the United Kingdom, New Zealand and South Africa.

FISHERIES (INCLUDING WHALING AND PEARLING)

The fishing industry in Western Australia consists of three distinct activities, the catching of edible species, whaling and pearl-shell production. In addition, pearl culture has been successfully established in recent years.

General Fisheries

Since the end of the second World War, rock lobsters have become the most important item of production of that section of the industry which is concerned with the catching of edible species. Prior to the war there was a small local market for fresh rock lobsters, but in 1941 production was stimulated by canning for the armed forces. Although canning continued until 1950, it had become far less important by 1947 than another development, the freezing of rock lobster tails for export, mainly to the United States of America. The overseas demand, which developed rapidly in post-war years, gave great impetus to the industry and the take increased greatly after 1947 to a record production of 22·0 million lb in 1967-68 valued at \$16·9 million. Although the catch for 1971-72 decreased to 18·3 million lb, the value of \$22·2 million was the highest ever recorded. Overseas and interstate exports of rock lobster tails in 1971-72 totalled 7·6 million lb with an f.o.b. value of \$24·6 million.

The most important commercial species of rock lobsters in Western Australian waters is *Panulirus longipes cygnus*, which is fished off the south-west coast between Murchison River and Bunbury. The principal localities around which rock lobsters are caught are Houtman Abrolhos, Geraldton, Dongara, Beagle Island, Green Head, Jurien Bay, Cervantes, Lancelin, Ledge Point and Fremantle. The industry is protected from overfishing by such measures as the declaration of closed seasons; the proclamation of fishing zones; the prohibition of the taking of lobsters of less than a prescribed size or of female rock lobsters having berry (*i.e.* eggs) attached; requiring that every rock lobster pot shall have an escape gap of specified dimensions; the granting only in special circumstances of new licences for boats for rock lobster-fishing; and limiting the number of pots that a boat may carry or use at any one time. The catch is processed either on specially equipped freezer boats or at shore stations licensed under the *Fisheries Act, 1905-1971* as processing establishments.

The large catches of Australian salmon (*Arripis trutta*), which school in the bays on the south and lower south-western coasts, yield a large proportion of the production of inshore and beach fishing and are used almost exclusively for canning. The remainder of the catch from this type of fishing comprises chiefly tailor (*Pomatomus saltator*), sea herring or ruff (*Arripis georgianus*), western sand whiting (*Sillago schomburgkii*), sea mullet (*Mugil cephalus*) and trevally or skipjack (*Usacaranx georgianus*). This is sold mainly as wet fish on the local market, but large quantities of sea herring are canned and there are some exports, principally of whiting, to the other Australian States.

The coastal waters northward from the mouth of the Murchison River to North West Cape and Exmouth Gulf are the source of several species of commercial importance. Snapper (*Chrysophrys unicolor*) are caught between the Murchison River and North West Cape, during the northern schooling season from May to August. Cod and Spanish mackerel, though in smaller quantities, are also caught between the Murchison River and North West Cape. At Shark Bay a prawn-fishing industry has been successfully established, the catch being processed at Carnarvon. The species caught are the western king prawn (*Penaeus latisulcatus*) and the brown tiger prawn (*P. esculentus*). A prawn fishery has also been established at Exmouth Gulf, the principal species caught being the brown tiger prawn and the western king prawn. Quantities of endeavour prawn (*Metapenaeus endeavouri*) and banana prawn (*P. merguensis*) are also caught. The catch is processed at Learmonth and on freezer boats. As a conservation measure the number of fishing boats licensed to operate has been limited to thirty-two at Shark Bay and twenty-two at Exmouth Gulf. From a catch of 238,937 lb in 1961-62, the State production of prawns has increased significantly and in 1971-72 was 5,662,000 lb. Production is expected to increase still further due to the establishment of commercial prawn fishing in the Nickol

Bay area, near Roebourne, and because of promising experimental trawling being carried out in other areas along the north coast.

The first fishing grounds to be exploited were the estuaries and rivers and, although they are not now as important as other grounds, they still provide substantial quantities of fish of a fairly wide variety. The principal species are cobbler (*Cnidogobius macrocephalus*) and yellow-eye mullet (*Aldrichetta forsteri*), most of which are caught in Peel Inlet and the Harvey and Swan estuaries. Other species include garfish (*Hemirhamphus australis*), Perth herring (*Fluvialosa vlaminghi*), sea mullet, tailor, sand whiting, King George whiting (*Sillaginodes punctatus*), and pilchard (*Sardinops neopilchardus*). Crabs (*Portunus pelagicus*), green-tail prawns (*Metapenaeus dalli*) and western king prawns are also caught commercially in these waters. Investigations are being carried out to determine the commercial potential of tuna stocks off the north-west coast.

The principal species of edible fish are shown in the following table with the quantities and value of each species caught in the years 1969-70 to 1971-72.

FISH, CRUSTACEANS AND MOLLUSCS: CATCH AND VALUE (a)

Species—Common name	Quantity (b) ('000 lb)			Value (c) (\$'000)		
	1969-70	1970-71	1971-72	1969-70	1970-71	1971-72
Fish—						
Anchovy (Whitebait)	114	176	92	17.1	15.8	14.7
Bream, black	10	18	41	2.2	4.1	11.5
Bream, buffalo	60	55	50	3.0	2.7	1.5
Bream, western yellowfin	18	28	11	2.4	3.3	2.0
Cobbler	234	383	419	37.7	53.6	76.2
Cod	42	43	51	5.1	5.8	7.7
Emperor (North-west snapper)	54	60	43	7.5	8.8	6.3
Emperor, red	(d)	38	41	(e)	6.4	8.6
Flathead, dusky	15	17	19	1.8	1.7	2.1
Garfish, sea	44	60	55	6.1	8.3	7.1
Groper, blue, brown or red	33	54	57	4.2	8.1	9.4
Herring, Perth	183	367	519	12.8	36.7	51.9
Jewfish, Westralian	301	291	186	105.4	116.1	87.0
Leatherjacket	23	27	29	2.9	4.0	3.4
Mackerel, Spanish	131	96	66	21.0	18.2	12.0
Mullet, sea	782	692	1,003	78.2	89.9	140.4
Mullet, yellow-eye	764	673	560	61.2	60.6	61.6
Mulloway (River kingfish)	13	19	13	1.0	1.4	1.1
Perch, giant (Barramundi)	22	31	38	1.2	3.5	4.3
Pilchard	*369	*497	374	*31.4	*65.2	59.8
Ruff (Sea herring)	1,353	1,615	2,003	47.3	64.6	100.1
Salmon, Australian	4,713	3,628	3,869	188.5	174.2	216.7
Samson fish (Sea kingfish)	100	61	95	9.8	7.7	7.6
Shark	826	1,034	1,114	104.0	149.6	168.1
Snapper	455	423	412	61.9	67.7	59.3
Tailor	112	102	100	10.1	15.3	15.0
Trevally (Skipjack)	45	24	30	4.1	4.2	3.9
Tuna	1,122	1,229	1,402	78.5	86.1	124.0
Whiting, King George	131	154	165	23.5	38.4	59.4
Whiting, western sand	425	343	362	76.6	65.2	101.3
Other species	98	104	129	12.4	12.5	17.5
Total Fish	12,592	12,339	13,347	1,018.8	1,199.7	1,441.7
Crustaceans—						
Crabs	68	107	118	17.8	48.1	35.2
Prawns—						
Banana	260	321	203	88.4	144.4	113.7
Brown tiger	2,942	2,570	1,893	1,529.6	1,310.8	1,041.1
Endeavour	258	597	344	80.0	191.1	71.1
Green-tail	157	53	57	42.5	21.2	34.3
Western king	1,875	2,637	3,165	956.1	1,318.7	1,709.3
Total Prawns	5,492	6,179	5,662	2,696.6	2,986.3	2,969.5
Rock lobsters	15,335	17,861	18,334	12,114.9	18,040.0	22,183.9
Total Crustaceans	20,896	24,147	24,114	14,829.3	21,074.4	25,188.6
Molluscs—						
Abalone	38	266	540	7.5	69.7	141.7
Scallops	2,862	3,897	109	200.4	214.1	6.6
Other molluscs	39	28	43	6.4	5.3	7.6
Total Molluscs	2,939	4,191	692	214.2	289.1	155.9
TOTAL, WESTERN AUSTRALIA ....	.....	.....	.....	16,062.3	22,563.2	26,786.2

(a) Excludes aquatic reptiles, details of which are not available for publication. (b) Live (whole) weight. (c) Gross value paid to fishermen. (d) Less than 500 lb. (e) Less than \$50. * Revised.

There are no indigenous inland or freshwater fish of commercial value. A relatively large crustacean, the marron (*Cherax tenuimanus*), occurs in the streams of the lower South-West and some success has been achieved in stocking farm dams with this species. Proposals to farm artificially-reared stocks are being investigated. Brown trout, rainbow trout and English perch have been introduced into the streams of the southern districts.

The Western Australian Department of Fisheries and Fauna, in association with the Commonwealth Scientific and Industrial Research Organization and other State and Commonwealth authorities, is undertaking research on rock lobsters, prawns, whiting, scallops, abalone, tuna and Australian salmon in Western Australian marine waters. These organisations are also involved in research into problems relating to estuaries and freshwaters, including examination of the effects of dredging and damming, the introduction of trout and marron into dams and freshwater streams, the pollution of inland lakes, and the tourist and recreational potential of the estuaries and freshwaters of the State. A special group of Fisheries Department officers is investigating the potential for commercial exploitation of selected species of fish from areas which, to date, have not been commercially exploited.

A marine research centre has been built at Waterman, about fourteen miles north of Fremantle, for the Department of Fisheries and Fauna. It incorporates eleven separate laboratories and a large aquarium with circulating water, for experiments and studies mainly on rock lobster. Fisheries research workers from the Department of Fisheries and Fauna, the Commonwealth Scientific and Industrial Research Organization and the University of Western Australia share accommodation at the centre.

A summary of the principal statistics of the fishing industry is given in the following table.

GENERAL FISHERIES

At 31 December—	Boats licensed	Value of boats and equipment	Fishermen licensed (a)	Year	Production			
					Rock lobsters		Other fish (b)	
					Quantity (c)	Value	Quantity (d)	Value
	number	\$'000	number		'000 lb	\$'000	'000 lb	\$'000
1967	1,487	11,413	2,724	1967-68	22,024	16,863	16,747	1,100
1968	1,412	14,603	2,785	1968-69	18,030	17,801	12,425	922
1969	1,450	18,243	3,005	1969-70	15,335	12,115	12,592	1,019
1970	1,456	19,460	2,895	1970-71	17,861	18,040	12,339	1,200
1971	1,508	20,060	3,169	1971-72	18,334	22,184	13,347	1,437

(a) Comprises employees and working proprietors.
weight of whole rock lobsters.

(b) Excludes crustaceans, edible molluscs and turtles.
(d) Estimated live weight.

(c) Live

The next table shows, for 1971-72, the quantity of fish, crustaceans, and molluscs caught, according to the method used.

FISH, CRUSTACEANS AND MOLLUSCS: CATCH BY METHOD, 1971-72
(⁰⁰⁰ lb)

Particulars	Haul net and beach seining	Hand lining (a)	Trawling	Pot fishing for rock lobsters	Other methods	Total
Fish	8,099	109	....	....	5,139	13,347
Crabs	84	....	....	....	34	118
Prawns	90	....	5,547	....	25	5,662
Rock lobsters	(b)	....	....	18,321	12	18,334
Molluscs	8	....	6	....	678	692
Total	8,281	109	5,553	18,321	5,889	38,152

(a) Snapper only. Catch of other species by hand lining is included in 'Other methods'.

(b) Less than 500 lb.

Whaling

Whaling has been conducted along the Western Australian coast from the first years of settlement and whale oil and whale bone were among the earliest exports from the Colony. Activity since then has fluctuated widely and at times ceased altogether. The

latest large-scale revival of the industry began in 1949, when a station at Point Cloates on the north-west coast was reopened after a lapse of more than twenty years. A treatment plant was established by the Australian Whaling Commission at Babbage Island, near Carnarvon, in 1951 and a plant at Frenchman Bay near Albany was enlarged in the following year. In 1956, the company operating from Point Cloates purchased the Australian Whaling Commission's station at Babbage Island and transferred its activities to that base.

During the 1963 season the two whaling companies operating in Western Australia took only eighty-seven humpback whales, compared with a quota of 550 allocated under the procedure laid down by the International Whaling Commission. At a meeting held in London in July 1963 the Commission decided that more stringent measures should be adopted to prevent further depletion of numbers. Accordingly it imposed a total ban on the taking of humpback whales for an indefinite period in all waters of the Southern Hemisphere. The company operating from Carnarvon, which relied mainly on the taking of humpbacks, ceased whaling activities at its Carnarvon base in August 1963.

Before the 1962 season the whales taken were predominantly humpbacks. The only station now operating is at Frenchman Bay where sperm whaling has been carried on since 1955.

The figures in the following table have been derived from information provided by the Fisheries Branch of the Australian Department of Primary Industry. Since 1963, more whales were taken in 1972 than in any other year but the highest production of oil occurred in 1971.

WHALING

Particulars						1968	1969	1970	1971	1972
Sperm whales taken	....	....	....	....	No.	658	679	799	860	953
Oil produced (a)	....	....	....	....	tons	3,912	4,357	5,281	6,069	5,772

(a) 1 ton = 6 barrels (approximately).

Pearl-shell Fishing and Pearl Culture

Pearl and pearl-shell fishing has been a valuable industry for many years, the main centre being Broome. The pearls obtained were once an important feature of production but the success of the industry now depends almost entirely on the shell produced and the price obtainable for it. Activities were suspended following the outbreak of war with Japan, when valuable luggers and equipment were lost. After the war recovery of the industry was slow because of a shortage of suitable boats and the difficulty in obtaining experienced divers. In 1953 the rate of progress improved when the services of trained Japanese divers again became available. By 1957 production of shell had reached the pre-war level of about 1,000 tons but due to the depressed state of the market it fell to 753 tons in 1958. Except for a slight recovery in 1960, production declined in each year from 1959 until 1964, when 138 tons of shell were raised. Due to the increased demand for shell for pearl culture, production has increased slightly since then.

In 1956 a licence was granted to a company to culture pearls at Kuri Bay in Brecknock Harbour, 130 miles north-east of Derby and the initial harvest of pearls was gathered in 1957. Licences have since been issued to two other companies and pearl culture farms have been established in Samson Inlet, Hiro Bay and Mura Bay and in King Sound and at Port Smith, south of Broome. During 1966 approximately 50,000 live shells were shipped from Western Australia to Papua, where they were used to establish the pearl culture industry at Fairfax Harbour. Further consignments followed in 1967, 1968 and 1969, when a total of 100,000 live shells were shipped.

An article by Dr D. A. Hancock, Chief Research Officer of the Western Australian Department of Fisheries and Fauna, describing the process of pearl culture at Kuri Bay appears in the *Appendix*.

MINING

Mineral statistics presented in the following pages are derived principally from the annual census of mining conducted by the Australian Bureau of Statistics. Data from the census are supplemented where necessary by publishable information made available by the Western Australian Department of Mines. Up to and including 1968 the annual census related to the period January to December inclusive but commencing with the 1968-69 census the period was changed to the year ended 30 June. In the tables that follow, the minerals have been valued on an ex-mine basis (*i.e.* selling value less cost of transportation). For the year 1968-69 the Australian Bureau of Statistics conducted the annual census of mining as part of a programme of fully integrated economic censuses covering mining and manufacturing industries, and wholesale and retail trade. This was a major undertaking involving the development of new concepts, definitions and procedures. Brief definitions relevant to the censuses appear below. Further details relating to the integrated economic censuses and the concepts and methods adopted appear in the *Appendix* of the 1971 issue of the Year Book and in bulletins relating to the economic censuses issued by the Commonwealth Statistician, Canberra.

NUMBER OF ESTABLISHMENTS. The number of establishments in operation at the end of June. These relate in general to a separate physical location predominantly engaged in mining. Numbers of separately-located administrative offices and ancillary units predominantly engaged in providing a service (*e.g.* administration, transport, storage) to mining establishments of the same enterprise are not included.

PERSONS EMPLOYED. Working proprietors at the end of June and employees on the pay-roll of the last pay-period in June, including those working at separately-located administrative offices and ancillary units in the State.

WAGES AND SALARIES. The wages and salaries of all employees, including those at separately-located administrative offices and ancillary units in the State. Amounts drawn by working proprietors are not included.

SALES, TRANSFERS OUT AND OTHER OPERATING REVENUE. Sales of goods whether produced by the establishment or not, plus transfers out of goods to other establishments of the same enterprise, plus all other operating revenue from outside the enterprise, such as commission, repair and service revenue. This excludes rents, leasing revenue, interest, royalties and receipts from the sale of fixed tangible assets.

PURCHASES, TRANSFERS IN AND SELECTED EXPENSES. Purchases of materials, fuel, power, stores, containers, etc. plus transfers in of goods from other establishments of the same enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments.

VALUE ADDED. Sales, transfers out and other operating revenue, plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

The foregoing definitions are relevant to the next table which provides a summary of the principal statistics from the mining censuses of 1970-71 and 1971-72.

The mining industry is of considerable significance in the Western Australian economy due to the exploitation of iron ore, nickel, oil, gold and other minerals. The mineral resources of the State are extremely varied in character and are widely distributed geographically. Extensive exploratory work is being undertaken to evaluate the known deposits and also to locate other reserves of minerals. The geology of the State is described in Chapter II, Part 1—*Physical Features and Geology*, and reference is made there to the occurrence of mineral deposits.

The development of mining as a major industry in Western Australia began with the discovery of gold in the Kimberley in 1885, although some forty years earlier coal had been found at the Irwin River and copper and lead in the Northampton district. The

impetus given to prospecting by the Kimberley finds led to other gold strikes between 1887 and 1891 and the rich discoveries at Coolgardie in 1892 and at Kalgoorlie in 1893.

Developments in recent years have led to a great increase in the value of mineral production. Vast deposits of iron ore in the State are being mined and the ore exported overseas and interstate or used by establishments located in Western Australia to produce iron ore pellets and pig iron. Nickel concentrates have also contributed considerably to the increase in the value of minerals. Crude oil is produced at Barrow Island and distribution of natural gas from fields at Dongara to domestic and industrial consumers in the State commenced in December 1971. Ilmenite and other mineral sands are being produced from deposits in the south-west of the State and bauxite, the source of alumina, is mined from deposits in the Darling Range.

Employment in the mining industry has fluctuated considerably over the years and until recently the gold mining industry was the major employer of labour. However, owing to increasing costs of mining, the depletion of higher grade deposits and gold price restraints, the gold mining industry has declined. This decline, together with the exploitation in recent years of the vast deposits of iron ore, has resulted in the iron ore industry becoming the major employer of labour in the mining sector in Western Australia.

The mining laws of the State have been designed to encourage as well as to control activity in the industry. This policy and the experience of other countries were given due consideration in framing them and they are regarded as equitable and offering all reasonable incentives to mining development. The various tenures are described in detail in Chapter VII, Part 1 of the *Western Australian Year Book*, No. 8—1969, No. 6—1967 and earlier issues.

A summary of mining operations in Western Australia by industry sub-division for the years 1970-71 and 1971-72 is given in the following table. Definitions relating to the principal items appear on page 380.

SUMMARY OF MINING OPERATIONS, BY INDUSTRY SUB-DIVISION
1970-71 AND 1971-72

Item	Metallic minerals		Fuel minerals (a)		Construction materials		Other non-metallic minerals		Total mining	
	1970-71	1971-72	1970-71	1971-72	1970-71	1971-72	1970-71	1971-72	1970-71	1971-72
Number of establishments	No. *58	No. 53	No. 5	No. 5	No. *32	No. 30	No. *27	No. 27	No. *122	No. 115
Persons employed—										
Males	8,264	8,092	692	691	570	488	506	545	10,032	9,816
Females	548	520	14	14	60	54	32	33	654	621
Total	8,812	8,612	706	705	630	542	538	578	10,686	10,437
Wages and salaries paid	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Sales, transfers out and other	44,387	51,446	3,247	3,979	3,023	3,409	2,937	3,555	53,593	62,388
operating revenue	462,087	525,371	42,772	42,675	12,334	15,406	9,914	10,491	527,107	593,944
Opening stocks	34,562	44,993	1,624	2,204	1,413	1,854	1,387	1,648	38,985	50,700
Closing stocks	38,880	60,401	2,205	1,578	2,042	1,220	2,099	3,013	45,225	66,212
Purchases, transfers in and selected expenses	133,918	165,028	2,587	3,638	5,637	6,187	4,762	4,871	146,904	179,725
Value added	332,488	375,750	40,766	38,410	7,326	8,586	5,864	6,985	386,444	429,731

(a) Comprises coal mining and crude oil and gas extraction.

* Revised.

The following table gives details of mineral production during the years 1969-70, 1970-71 and 1971-72, valued on an ex-mine basis. The data are derived principally from Mining Census returns, supplemented by data obtained from surveys of Non-Mining Division establishments producing minerals (e.g. brickworks producing clay). Additional data were obtained from the Western Australian Department of Mines in respect of itinerant and part-time miners, and in respect of those commodities where data from census returns would be confidential.

MINERAL PRODUCTION

Item	1969-70		1970-71		1971-72 (a)	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$'000	tons	\$'000	tons	\$'000
Asbestos	27	1	57	2	(b)	(b)
Barytes	419	6	520	6	.....	.....
Bauxite	2,860,679	(b)	4,140,243	(b)	4,740,507	(b)
Beryl	(b)	(b)	23	7	56	15
Clays—all kinds (c)	1,331,013	999	1,053,441	949	1,299,014	1,231
Coal	1,159,101	5,407	1,171,398	5,653	1,168,754	5,855
Construction materials—						
Building and monumental stone	173,773	357	106,828	281	321,208	782
Crushed and broken stone	3,428,213	10,324	4,186,028	10,144	3,767,007	10,837
Crushed and broken limestone	851,933	298	1,048,158	484	1,750,573	1,948
Copper ore for fertiliser	627	74	92	13	.....	.....
Copper concentrate	3,442	798	2,583	420	920	229
Crude oil (d)	15,582,841	44,879	16,534,837	35,570	15,975,694	32,111
Felspar	604	9	457	7	590	9
Gold bullion (e)	542,139	15,760	467,189	13,872	462,009	14,900
Gypsum	89,281	238	197,580	597	175,199	615
Iron ore	34,029,989	195,074	45,684,080	279,478	51,834,445	316,387
Lead concentrate	271	35	186	18	(b)	(b)
Limestone for industrial purposes (f)	1,511,498	1,071	1,373,181	790	1,125,838	726
Magnesite .....	.....	.....	2,180	32	90	1
Manganese ore	152,209	948	142,194	477	109,749	(b)
Mineral sands—						
Ilmenite	677,743	6,300	730,905	7,034	679,578	8,016
Leucoxene	9,402	420	12,660	975	12,343	1,089
Monazite	3,550	437	3,601	471	2,794	354
Rutile	2,441	232	2,456	186	2,910	303
Xenotime	101	119	41	54	14	18
Zircon	54,537	1,350	54,270	1,360	51,373	1,147
Natural gas	'000 cu ft		'000 cu ft		'000 cu ft	
.....	301,605	151	544,000	272	10,517,451	(b)
Nickel concentrate	157,555	(b)	299,244	(b)	294,419	(b)
Ochre .....	.....	.....	608	6	.....	.....
Pyrite concentrate	10,863	125	.....	.....	.....	.....
Salt	1,014,968	3,176	2,685,717	7,092	2,573,476	7,695
Semi-precious stones	n.a.	37	n.a.	50	n.a.	63
Talc	41,388	683	30,761	483	30,411	555
Tantalite concentrate	lb		lb		lb	
.....	(b)	(b)	350,064	936	357,190	835
Tin concentrate	tons		tons		tons	
.....	895	1,914	945	1,939	1,434	2,808
Other (value only) (g) .....	.....	*48,737	.....	*76,986	.....	101,820
Total value ex-mine .....	.....	339,959	.....	446,643	.....	510,353

n.a. denotes 'not applicable'.

(a) Preliminary figures; subject to revision. (b) Not available for publication; value included in 'Other'. (c) Includes production of bentonite. (d) Value based on price per barrel published by Ampol Petroleum Limited. (e) Values include amounts realised by the Gold Producers' Association Ltd. on sales of Western Australian gold—in 1969-70, \$1,780,000; in 1970-71, \$538,000; in 1971-72, \$2,232,000. They also include Commonwealth net subsidy paid to gold producers—in 1969-70, \$1,653,000; in 1970-71, \$2,467,000; in 1971-72, \$1,710,000. (f) Comprises limestone used for agriculture, cement making, flux, glassmaking, lime burning and iron ore pelletising. (g) Includes those minerals for which values are not available for publication. * Revised.

Gold

Although specimens of gold had been found in earlier years at several places in the Colony, it was first discovered in payable quantities in the Kimberley in 1885. This find led to widespread prospecting activity, resulting in further gold strikes between 1887 and 1891 in the Yilgarn, Pilbara, Ashburton and Murchison districts. These were followed by spectacular discoveries in 1892 at Coolgardie and in 1893 at Kalgoorlie where the famous Golden Mile was developed. The Golden Mile is still the principal source of gold in the State and accounts for about one-half of Australia's total production. By 1900 all the present proclaimed goldfields, ranging from Kimberley in the north to Phillips River in the south, had been opened up.

Production of fine gold reached a maximum of 2,064,800 fine ounces in 1903 but there followed a gradual and continuous decline, due mainly to exhaustion of surface deposits, until in 1929 the yield was only 377,176 fine ounces. In succeeding years various economic factors stimulated activity in the industry and there was a well-maintained improvement

until 1939 when production reached 1,214,238 fine ounces. The second World War brought about a decline which was accelerated by the introduction early in 1942 of a rigid system of manpower control. Production recovered to some extent in post-war years reaching 874,819 fine ounces in 1958 but, after a short period of fluctuating output between 1959 and 1963, it then declined. In 1971-72 production of fine gold from all sources totalled 348,758 fine ounces.

The figures given in the following table relate to production of gold bullion and do not include gold contained in other minerals. Values include amounts distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. The amounts shown as 'Commonwealth net subsidy' represent payments made to gold producers under the Gold-Mining Industry Assistance Act passed by the Commonwealth Parliament in 1954. An amendment to the Act in 1965 liberalised the conditions applying to subsidy payments and continued the operation of the Act until 30 June 1970. Further amendments in 1970 and 1972 to the Gold-Mining Industry Assistance Act extended the Act until 30 June 1973 and 1975, respectively. The 1972 amendment increased both the maximum amount of subsidy paid to large producers and the proportion retained by subsidised producers of the premiums by which the prices obtained for gold exceed the official price.

MINE PRODUCTION OF GOLD BULLION (a)

Item	Unit	1968	1968-69	1969-70	1970-71	1971-72
Gold bullion produced	oz	765,417	668,618	542,139	467,189	462,009
Metallic content of gold bullion—						
Gold	fine oz	514,821	477,739	390,727	344,545	(b) 348,758
Silver	fine oz	183,553	160,031	122,092	109,477	(b) 101,315
Payments by Gold Producers' Association Ltd.	\$'000	795	2,214	1,780	538	2,232
Commonwealth net subsidy	\$'000	2,621	1,586	1,653	2,467	1,710
Total value ex-mine	\$'000	19,780	18,935	15,760	13,872	14,900

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969. (b) Includes small amounts contained in copper concentrate, details of which are not available separately.

Silver

The greater portion of silver produced in Western Australia has been obtained as a by-product of gold mining, details of the silver content of gold bullion being given in the previous table. The other silver production is from silver-lead, silver-lead-zinc and copper ores and concentrates exported for treatment outside the State but quantities so obtained are of relatively minor importance.

Bauxite

Following a survey of bauxite deposits, which occur over a large area in the Darling Range, trial shipments of bauxite totalling 36,741 tons were sent to Tasmania and Japan in 1959 and 1960 and in 1963 a mine at Jarrahdale began supplying ore to an alumina refinery at Kwinana. In April 1972, a refinery near Pinjarra commenced operations, using ore transported by conveyor-belt from a new mine nearby.

Development of the extensive bauxite deposits discovered in the Admiralty Gulf area in the Kimberley in 1965 by Amax Bauxite Corporation as planned under the provisions of the *Alumina Refinery (Mitchell Plateau) Agreement Act, 1969-1972* has been deferred for a number of years.

Coal

The first reports of coal discoveries, in the Murray district and on the Irwin River, were made in 1846 but the only commercial production in Western Australia occurs at the Collie River Mineral Field. The coal is sub-bituminous in rank and there are substantial reserves in the area.

Surface mining was commenced at Collie in 1943 and the amount produced by this means increased rapidly until in 1952 almost one-half of the total production came from surface mines. In each year from 1953 to 1960 the proportion of coal from surface mines was less than in 1952, and in 1960 was little more than one-eighth of all coal produced. New contracts for government requirements, which came into operation at the beginning of 1961, provided for an increase in supplies from surface mines, and in 1971-72 more than 65 per cent of all coal produced came from this source.

The following table gives details of the quantity and value of coal produced over the period 1968 to 1971-72.

COAL PRODUCTION (a)

Particulars	1968	1968-69	1969-70	1970-71	1971-72
Coal produced—					
From underground mines '000 tons	482	479	480	431	403
From surface mines '000 tons	605	624	679	740	766
Total '000 tons	1,087	1,103	1,159	1,171	1,169
Value \$'000	4,817	4,853	5,407	5,653	5,855

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.

Copper Ore and Concentrates

Copper ore in commercial quantities was discovered in 1849 in the Northampton district. High-grade ore was found in 1855 at Bowes River in the same area and in 1872 one of the richest deposits was discovered in the West Pilbara near Roebourne. Considerable quantities of copper have been produced at the mines in the Northampton district, where it occurs in association with lead, and also in the Ravensthorpe area, in association with gold.

Due to low prices, rising costs of mining and treatment and the exhaustion of rich secondary ores near the surface, production was on a very small scale between 1925 and 1956. It then increased substantially and in 1961 reached 6,290 tons. In the succeeding years production has declined and in 1971-72 amounted to 920 tons. Production of copper concentrates by the major producer ceased during 1971.

PRODUCTION OF COPPER CONCENTRATES (a)
(For smelting to copper)

Year	Quantity	Metallic content			Value
		Copper	Gold	Silver	
	tons	tons	fine oz	fine oz	\$'000
1968	4,276	963	1,129	3,806	914
1968-69	3,353	775	1,385	5,965	647
1969-70	3,442	692	(b)	(b)	798
1970-71	2,583	472	689	751	420
1971-72	920	268	(b)	(b)	229

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.

(b) Not available for publication.

Copper Ore (for fertiliser)

The demand for copper to remedy trace element deficiencies in soils created a market for low-grade ores for use in chemical fertilisers. Until this development, the production of ores having a low copper content was uneconomical because of high costs of transport and smelting.

Production for use in fertilisers commenced in 1947 and increased to 7,731 tons in 1955. After reaching a peak of 11,859 tons in 1959, it declined in 1960 and 1961 but

improved to 9,275 tons in 1962. In subsequent years production decreased substantially to only 92 tons in 1970-71 and nil in 1971-72. The Yalgoo, Pilbara and Peak Hill areas were the principal sources of supply.

PRODUCTION OF COPPER ORE FOR FERTILISER (a)

Year	Quantity	Metallic content	Value
		Copper	
	tons	tons	\$
1968	691	90	45,009
1968-69	940	117	112,619
1969-70	627	113	73,770
1970-71	92	18	12,512
1971-72			

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.

Mineral Sands

Ilmenite, leucoxene, monazite, rutile, xenotime and zircon concentrates are being produced from mineral sands mined at Capel, Wonnerup and Stratham, and treated at Bunbury and Capel. The ilmenite content is of particular importance because it is virtually chrome-free and little difficulty is experienced in producing a concentrate of high quality. Production of ilmenite concentrates commenced in 1956, when recorded production was 3,293 tons. Output has risen rapidly and in 1971-72 amounted to 679,578 tons. Production of the other concentrates, which are recovered as by-products from the treatment of the beach sands for ilmenite, commenced in 1958 and output of leucoxene, monazite, rutile, xenotime and zircon in 1971-72 totalled 69,434 tons.

Following research into the feasibility of producing upgraded ilmenite concentrates as an alternative to natural rutile as an input in the manufacture of chloride pigments Western Titanium Limited, in October 1972, announced plans to construct a full-scale ilmenite upgrading plant with a designed capacity of 30,000 tons per annum. It is anticipated that the plant will be fully operational during 1974-75.

Production of ilmenite, leucoxene, monazite, rutile, xenotime and zircon concentrates from mineral beach sands in the period 1968 to 1971-72 is given in the following table.

PRODUCTION OF MINERAL BEACH SANDS (a)

Particulars	Unit	1968	1968-69	1969-70	1970-71	1971-72
Ilmenite concentrates (b)—						
Quantity	ton	535,232	638,533	677,743	730,905	679,578
Value	\$	4,531,740	5,334,097	6,299,866	7,033,667	8,016,439
Leucoxene concentrates—						
Quantity	ton	1,607	8,730	9,402	12,660	12,343
Value	\$	70,312	357,925	420,457	975,303	1,088,900
Monazite concentrates—						
Quantity	ton	1,256	3,014	3,550	3,601	2,794
Value	\$	142,167	347,693	436,939	471,253	354,062
Rutile concentrates—						
Quantity	ton	845	1,260	2,441	2,456	2,910
Value	\$	63,748	100,392	232,310	185,726	303,484
Xenotime concentrates—						
Quantity	ton	18	38	101	41	14
Value	\$	45,000	76,300	119,351	53,869	18,480
Zircon concentrates—						
Quantity	ton	28,096	51,785	54,537	54,270	51,373
Value	\$	826,606	1,193,667	1,349,937	1,360,461	1,147,011

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended June 1969.

(b) Includes beneficiated ilmenite.

Iron

The major iron-ore deposits are concentrated in the north-west of the State, and measured, indicated and inferred reserves of iron ore with an iron content of 50 per cent or higher have been assessed at 20,000 million tons. Since 1951 large quantities of hematite have been produced at Cockatoo Island (Yampi Sound) in the West Kimberley district for shipment to Kwinana in Western Australia, other Australian States and overseas. The first shipment of ore from the deposits on the adjacent Koolan Island was made in January 1965, following the completion of mining and loading facilities which had been under development since 1960.

As a result of the passage in 1960 of the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act, which ratifies an agreement between the State Government and the Company relating to the establishment of an integrated iron and steel industry in Western Australia, a mine was developed at Koolyanobbing which commenced production in April 1967. The ore is being railed to Kwinana for use in the blast furnace established at Kwinana in terms of the agreement, and for export interstate and overseas.

The announcement in December 1960 of the Australian Government's decision to modify its embargo on overseas exports, which had been in force since 1938, caused increased interest in Western Australian deposits. A number of discoveries of valuable deposits of iron ore resulted from the impetus thus given to exploration. As a consequence the State Parliament has ratified a number of agreements between the Government and private companies for the mining and export of iron ore and, in certain instances, for secondary processing of the ore as a later development and, ultimately, for the establishment of integrated iron and steel works. The provisions of these agreements are referred to on pages 106 and 110 of the *Official Year Book of Western Australia*, No. 4—1964, in the section *Legislation during 1963 and 1964* in Chapter III of the succeeding issue, on page 114 of the *Western Australian Year Book*, No. 6—1967, on page 111 of the 1969 Year Book, on page 113 of the 1970 issue and on page 106 of the Year Book for 1971. The ore is exported overseas, mainly to Japan. A number of contracts between leading Japanese steel mills and various mining companies has resulted in several large-scale mining operations, the first of which commenced in 1966. Ore from Koolanooka Hills, near Morawa, is being transported by rail to the port of Geraldton, 100 miles distant. From Mount Goldsworthy and Shay Gap, east of Port Hedland, ore is being railed to a deep-water port on Finucane Island, just off Port Hedland. Ore mined at Mount Tom Price and Paraburdoo, in the Hamersley Range area south-west of Port Hedland, is being railed to the port of Dampier in King Bay, which is west of Roebourne. From Mount Whaleback in the Ophthalmia Range ore is railed to Port Hedland, 265 miles to the north. Limonitic ore from Pannawonica, in the Robe River valley, is railed to a pellet plant at Cape Lambert. The first shipments of iron ore under these contracts were made from Geraldton on 17 March 1966; from Port Hedland on 2 June 1966; and from Dampier on 22 August 1966.

Production of iron ore under these contracts has increased substantially each year, rising to 51·8 million tons in 1971-72, as shown in the next table.

PRODUCTION OF IRON ORE (a)

Year	Quantity	Metallic content	Value
		Iron	
	'000 tons	'000 tons	\$'000
1968	18,828	12,157	110,942
1968-69	23,345	14,872	140,075
1969-70	34,030	21,514	195,074
1970-71	45,684	28,875	279,478
1971-72	51,834	32,754	316,387

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.

Lead Ore

Lead ore was discovered near the lower Murchison River in 1848. It has since been found in other localities, principally in the Pilbara, Ashburton and West Kimberley districts, and half a million tons have been raised, the great bulk of it from the mineral field around Northampton, the area of the first finds. Production fluctuated very widely and ceased almost entirely during the war, but a substantial increase occurred in the post-war years and in 1956 it rose to 7,613 tons. After 1956 it declined rapidly and in 1963 only 185 tons were produced. In 1964, when 3,354 tons were produced, there was a revival of lead mining in the West Kimberley mineral field. After a further gain to 4,878 tons in 1965, production again declined and in 1970-71 was only 186 tons.

Although the ore from the Northampton field is almost free from silver, that from other areas further north, notably the Ashburton, Pilbara and West Kimberley, has a silver content which may be as much as ten ounces per ton. Production of such ores is included in the following table.

PRODUCTION OF LEAD CONCENTRATES (a)

Year	Quantity	Metallic content			Value
		Silver	Lead	Zinc	
	tons	fine oz	tons	tons	\$
1968	418	46	311	....	33,381
1968-69	4,429	64	1,367	....	149,501
1969-70	271	56	179	(b)	35,115
1970-71	186	35	84	....	18,341
1971-72	(b)	....	(b)	....	(b)

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969. (b) Not available for publication.

Manganese Ore

Deposits of manganese ore occur in several parts of the State but up to the end of 1947 only 252 tons had been mined. After 1947 production increased rapidly and in 1961 totalled 83,660 tons. After a decline to 34,808 in 1963, production increased and in 1967 a record output of 195,065 tons was produced, but since then production has declined as shown in the following table.

PRODUCTION OF MANGANESE ORE (a)

Year	Quantity	Metallic content	Value
		Manganese	
	tons	tons	\$'000
1968	150,338	69,398	735
1968-69	163,169	75,613	*1,158
1969-70	152,209	76,612	948
1970-71	142,194	64,421	477
1971-72	109,749	47,158	(b)

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.
(b) Not available for publication. * Revised.

Nickel

Since the discovery on 28 January 1966 of nickel deposits at Kambalda, thirty-five miles south of Kalgoorlie, there has been rapid expansion in the nickel industry accompanied by a very high level of exploration activity. At the end of 1973 mines were operating at Kambalda, Scotia, Nepean and Widgiemooltha and development work in preparation for mining was being carried out at Mount Windarra and Spargoville.

Besides being exported overseas, nickel concentrates are further processed into metal at a refinery at Kwinana and also used as input for the new smelter at Hampton, near Kalgoorlie.

Details of production of nickel concentrates from 1968 to 1971-72 are given in the following table. The value of production is not available for publication.

PRODUCTION OF NICKEL CONCENTRATES (a)

Year	Quantity	Metallic content—		
		Nickel	Copper	Cobalt
	tons	tons	tons	tons
1968	36,880	4,603	538	121
1968-69	51,140	6,086	767	99
1969-70	157,555	17,762	1,814	170
1970-71	299,244	34,366	2,892	331
1971-72	249,419	34,997	2,549	164

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.

Petroleum

Reference to petroleum exploration in Western Australia is made on page 391. In May 1966 Barrow Island, sixty miles north-east of Onslow, was declared a commercial oilfield, after prolonged testing. Production commenced in 1967 and the first shipment of crude oil from this field was made on 25 April 1967.

Following an extensive exploratory drilling programme by West Australian Petroleum Pty. Ltd. the Dongara gas field, approximately sixty miles south-east of Geraldton, was declared commercially viable on 1 July 1970. Construction of a 255-mile underground pipeline, from Dongara to Kwinana and Pinjarra, costing in excess of \$19 million has been completed, and West Australian Natural Gas Pty. Limited, a sister company of West Australian Petroleum Pty. Ltd., is marketing the gas to certain industries and to the State Electricity Commission for general distribution and power generation. Supply of the gas to domestic and industrial consumers commenced on 1 December 1971.

PRODUCTION OF PETROLEUM (a)

Year	Crude oil		Natural gas	
	Quantity	Value	Quantity	Value
	'000 bbls	\$'000	'000 cu ft	\$'000
1968	10,777	31,036	92,922	46
1968-69	11,649	33,549	143,603	72
1969-70	15,583	44,879	301,605	151
1970-71	16,535	35,570	544,000	272
1971-72	15,976	32,111	10,517,451	(b)

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969. (b) Not available for publication.

Potash

An agreement between the Western Australian Government and Texada Mines Pty. Limited relating to the production of potash and other evaporites at or near Lake MacLeod was ratified by Parliament in terms of the *Evaporites (Lake MacLeod) Agreement Act, 1967*. Following a \$300,000 proving programme the company is proceeding with the establishment of a potash industry at an estimated cost of \$13 million. The first stage, costing \$6.75 million, began operating towards the end of 1973 at an initial capacity of 200,000 tons per annum, but is capable of further expansion to 300,000 tons per annum.

Salt

Common salt (sodium chloride) occurs extensively in Western Australia both in maritime lagoons and inland lakes and has been harvested on a commercial basis for many years from dry lake beds. In November 1968 Lefroy Salt Pty. Ltd. commenced large-scale production of salt from Lake Lefroy in the Shire of Coolgardie where the salt deposited has an exceptional purity.

In recent years the production of salt by the solar evaporation of sea water has become the major source of salt in this State. The low rainfall in the North-West coupled with the high evaporation rate make the north-west coast ideal for solar salt production. Leslie Salt Company is producing salt near Port Hedland; Texada Mines Pty. Limited is producing at Lake MacLeod near Carnarvon; the Shark Bay Salt Venture is engaged in salt production at Useless Loop in Shark Bay; and Dampier Salt Limited is producing salt at Dampier. Further development of the solar salt project at Exmouth Gulf has been deferred pending recovery in the world salt market.

The salt industry is being developed principally for the export market and to date most exports have been to Japan. During the year ended June 1972, 2,573,476 tons of salt valued at \$7,694,800 were produced. This represents a slight reduction in the amount produced compared with the production of 2,685,717 tons valued at \$7,092,000 in 1970-71 but the tonnage was considerably higher than that for 1969-70 when 1,014,968 tons valued at \$3,176,000 were produced.

Tin Ore

Tin ore was first discovered at Greenbushes in 1888. It has since been found at several other places, but the Greenbushes and Pilbara fields have been the only major producers. Output declined during the war but increased substantially after 1949 and reached a peak in 1956 when 358 tons of ore and concentrates were produced. By 1958, however, it had declined to 138 tons, the decrease being due mainly to contraction of operations in the Greenbushes field. After 1958 production again increased and in 1971-72 total output was 1,434 tons valued at \$2,808,000.

PRODUCTION OF TIN CONCENTRATES (a)

Year	Quantity	Tin content	Value
	tons	tons	\$'000
1968	895	624	1,630
1968-69	899	624	1,773
1969-70	895	609	1,914
1970-71	945	(b) 656	1,939
1971-72	1,434	1,019	2,808

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969. (b) Includes tin content of tantalite concentrates.

Other Minerals

In addition to the other minerals listed in the table on page 382 there are some which have a high potential value but are not produced in large quantities at present. Zinc is associated with many of the silver-lead ores and some of the copper ores and has been mined as the carbonate with a zinc content of 38 per cent. Arsenious oxide and antimonial concentrates were produced commercially for some years as by-products in the treatment of auriferous ores. Small amounts of bismuth concentrates assaying as high as 73 per cent bismuth have also been produced. Tungsten ores have been produced in small quantities for some years with a slight increase during the war. Since then, output has been spasmodic. Glass sand (silica) is being produced and significant quantities are being exported overseas. Lithium, yttrium, cerium, thorium, vanadium, niobium, and molybdenum-bearing minerals are known to occur in commercial quantities and small amounts of minerals containing uranium, rubidium and caesium have been found. Deposits of bentonite, barytes, graphite, mica, kyanite, sillimanite, spodumene and vermiculite are also known and small amounts have been produced.

Construction Materials

The following table gives details of the production of certain construction materials from 1968 to 1971-72. It should be noted that gravel, sand and clays, for which reliable and complete information cannot be obtained are not included.

PRODUCTION OF CONSTRUCTION MATERIALS (a)

Year	Building and monumental stone (b)		Crushed and broken stone (c)		Crushed and broken limestone (d)	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 tons	\$'000	'000 tons	\$'000	'000 tons	\$'000
1968	170	364	3,056	6,938	604	221
1968-69	185	406	3,748	9,724	867	363
1969-70	174	357	3,428	10,324	852	298
1970-71	107	281	4,186	10,144	1,048	484
1971-72	321	782	3,767	10,837	1,751	1,948

(a) The annual mining census was changed to a fiscal year basis commencing with the year ended 30 June 1969.
 stone, granite, sandstone and other stone.

(c) Principally for roads, concrete aggregate and rail ballast.

(b) Limestone.
 (d) Principally for road construction.

PRIVATE EXPLORATION FOR MINERALS

Mineral Exploration (excluding petroleum)

Mineral exploration, which covers a major portion of the State, is concerned chiefly with exploration for iron, nickel, copper, gold, lead, tin, bauxite, manganese, phosphates, mineral sands, talc and coal, apart from petroleum (see following section).

In the next table, details are given of private exploration in Western Australia for the years 1968 to 1971-72. The data have been derived from the annual Mineral Exploration Census (excluding Petroleum Exploration) which is carried out by the Australian Bureau of Statistics. The first census was conducted in respect of the year 1965 and for further information and statistics in greater detail, the reader is referred to the mimeographed publication *Mineral Exploration* issued by the Commonwealth Statistician, Canberra.

For the purpose of the census, 'mineral exploration' consists of the search for, and/or appraisal of, new ore occurrences and known deposits of minerals (including extensions to deposits being worked) by geological, geophysical, geochemical, and other methods, including drilling. The construction of shafts and adits is included if primarily for exploration purposes but mine development activities and exploration for water are excluded.

MINERAL EXPLORATION (OTHER THAN FOR PETROLEUM) (a)

Particulars	Unit	1968	1968-69	1969-70	1970-71	1971-72
PRIVATE EXPLORATION (b) ON PRODUCTION LEASES						
Expenditure (c)—						
On drilling	\$'000	909	2,184	2,921	4,423	4,219
Other (d)	\$'000	468	1,120	3,082	6,928	7,246
Total	\$'000	1,377	3,305	6,004	11,350	11,465
Payments to contractors (e)	\$'000	204	1,435	2,196	3,562	2,588
Employment (f)—						
Working proprietors and working partners	man-week	(g)	(g)	(g)	257	174
Professional persons (h)	man-week	795	1,566	3,296	4,866	9,262
Non-professional persons (i)	man-week	4,819	5,255	10,732	14,750	11,821
Total man-weeks worked	man-week	5,614	6,821	14,028	19,873	21,257
Footage drilled, sunk or driven—						
Drilled—						
Core	foot	111,297	228,086	335,235	394,758	361,157
Non-core	foot	244,919	307,234	467,420	942,460	1,265,712
Total	foot	356,216	535,320	802,655	1,337,218	1,626,869
Sunk or driven (j)	foot	11,190	83,549	37,587	6,665	13,204

For footnotes, see end of table.

MINERAL EXPLORATION (OTHER THAN FOR PETROLEUM) (a)—continued

Particulars	Unit	1968	1968-69	1969-70	1970-71	1971-72
OTHER PRIVATE EXPLORATION (b)						
Expenditure (c)—						
On drilling	\$'000	5,558	8,279	11,372	17,085	11,007
Other (d)	\$'000	16,213	23,828	42,445	57,647	40,351
Total	\$'000	21,771	32,107	53,817	74,732	51,358
Payments to contractors (e)	\$'000	7,382	12,226	17,915	26,482	14,464
Employment (f)—						
Working proprietors and working partners	man-week	(g)	(g)	(g)	4,104	1,616
Professional persons (h)	man-week	13,668	16,770	22,960	31,772	32,056
Non-professional persons (i)	man-week	33,555	44,083	66,325	79,727	59,524
Total man-weeks worked	man-week	47,223	60,853	89,285	115,603	93,196
Footage, drilled, sunk or driven—						
Drilled—						
Core	foot	603,532	771,062	844,985	810,630	640,621
Non-core	foot	785,363	1,064,579	4,628,395	4,265,718	4,280,548
Total	foot	1,388,895	1,835,641	5,473,380	5,076,348	4,921,169
Sunk or driven (j)	foot	11,530	38,041	30,446	240,750	98,078
TOTAL PRIVATE EXPLORATION (b)						
Expenditure (c)—						
On drilling	\$'000	6,467	10,464	14,293	21,507	15,226
Other (d)	\$'000	16,681	24,948	45,527	64,574	47,597
Total	\$'000	23,148	35,412	59,821	86,082	62,823
Payments to contractors (e)	\$'000	7,586	13,661	20,111	30,044	17,052
Employment (f)—						
Working proprietors and working partners	man-week	(g)	(g)	(g)	4,361	1,790
Professional persons (h)	man-week	14,463	18,336	26,256	36,638	41,318
Non-professional persons (i)	man-week	33,374	49,338	77,057	94,477	71,345
Total man-weeks worked	man-week	52,837	67,674	103,313	135,476	114,453
Footage drilled, sunk or driven—						
Drilled—						
Core	foot	714,829	999,148	1,180,220	1,205,388	1,001,778
Non-core	foot	1,030,282	1,371,813	5,095,815	5,208,178	5,546,260
Total	foot	1,745,111	2,370,961	6,276,035	6,413,566	6,548,038
Sunk or driven (j)	foot	22,720	121,590	68,033	247,415	111,282

(a) The annual census of mineral exploration was changed to a fiscal year basis commencing with the year ended 30 June 1969.
 (b) Excludes exploration by the Western Australian Department of Mines and the Australian Bureau of Mineral Resources, Geology and Geophysics. (c) Expenditure whether charged as working expenses or capitalised. Includes payments to contractors. (d) Includes expenditure on geological work and on adits, shafts, etc. (e) Amounts paid to drilling contractors, geological consultants, technical advisers, etc. for exploration services. Included in preceding figures. (f) Comprises the operator and his staff only; includes time spent on report writing and similar off-site activities associated with exploration; excludes contractors and their employees. (g) Not collected as a separate item prior to 1970-71. (h) Geologists, geophysicists, engineers, etc. engaged in exploration work. (i) Drill operators, field hands, etc. (j) Includes shafts, winzes, etc. sunk; drives, adits, etc. driven; and costeans, small pits, etc.

Petroleum Exploration

An extensive programme of oil exploration using modern geophysical and drilling techniques commenced in 1952 and resulted in the discovery of flow oil in the Exmouth Gulf area of the Carnarvon Basin in 1953. The discovery proved to be of non-commercial significance, but it stimulated further exploration for oil in Western Australia. A large area of the State has now been scientifically examined and geophysical and geological surveys are still being carried out. Discoveries of crude oil and/or gas have been made at Barrow Island and Yardarino (1964), at Gingin (1965), at Dongara (1966), at Pascoe Island (1967), at Mondarra (1968).

In recent years exploration off the coast of Western Australia has intensified and crude oil and/or gas has been discovered in a number of offshore wells located on the north-west continental shelf, north of 21 degrees latitude.

Information on petroleum exploration expenditure and on drilling in Western Australia for the five years 1968 to 1972 is given in the tables below. These figures have been compiled from data published by the Bureau of Mineral Resources, Geology and Geophysics.

Petroleum exploration is defined as consisting of the search for, and/or appraisal of, deposits of crude oil and/or gas by geological, geophysical, geochemical and other means, including drilling. Included in the expenditure are the costs of drilling exploratory oil and/or gas wells and the testing of such wells. Also included are the costs of access roads,

site construction, permits, licences and similar fees, relevant office buildings and furniture, transportation equipment, storage facilities, plant and equipment and review work if primarily for the purposes of exploration for deposits of crude oil or natural gas. Details of drilling developmental oil and/or gas wells and expenditure on production facilities, and pipelines and production costs, etc. are excluded.

PRIVATE PETROLEUM EXPLORATION—EXPENDITURE AND SOURCE OF FUNDS
(\$'000)

Particulars	1968	1969	1970	1971	1972
Private expenditure (a)—					
Geological	449	516	801	1,408	727
Geophysical	6,026	6,684	8,876	9,126	11,629
Drilling	17,463	23,847	21,771	32,162	43,954
Other	1,621	1,432	2,714	2,766	5,803
Total	25,560	32,480	34,161	45,462	62,112
Source of funds—					
Private sources	21,532	26,194	29,557	41,872	57,902
Government subsidy (b)	4,027	6,286	4,604	3,590	4,209

(a) Includes expenditure financed by payments under the *Petroleum Search Subsidy Act* 1959–1973 (Commonwealth).
(b) Comprises payments under the *Petroleum Search Subsidy Act* 1959–1973.

PRIVATE PETROLEUM EXPLORATION—WELLS AND FOOTAGE DRILLED

Particulars	Unit	1968	1969	1970	1971	1972
Wells—						
Drilled (i.e. those which reached final depth)—						
As oil producers	No.	1	....	1	....	2
As gas producers	No.	1	1	....	1	6
Plugged and abandoned	No.	24	22	14	29	37
Total	No.	26	23	15	30	45
Average final depth of wells drilled	ft	5,832	7,500	6,654	8,363	6,615
Drilling still in progress at 31 December (uncompleted holes)	No.	4	1	4	1	6
Drilled or drilling over 10,000 feet	No.	5	9	5	14	16
Footage drilled—						
Completed wells	ft	145,250	142,148	91,037	222,150	291,067
Uncompleted holes	ft	30,329	10,871	28,737	10,857	48,513
Total	ft	175,579	153,019	119,774	233,007	339,580

Chapter VIII—continued

Part 2—Secondary Industry

NATURE OF MANUFACTURING IN WESTERN AUSTRALIA

Although manufacturing in Western Australia, in common with manufacturing throughout Australia, holds a very important place relative to the other productive sectors, it is relatively less important in this State than in most other States and the country as a whole. Value added by manufacturing establishments (see definition on page 398) per head of mean population in Western Australia was \$451 in 1971-72, compared with the national figure of \$752. In relative terms, the primary industries (agriculture, hunting, forestry, fishing and mining) in Western Australia contribute much more to national aggregates than manufacturing. In 1971-72 net value of production of the primary industries (excluding mining) in Western Australia was 8·6 per cent of the Australian total and value added by mining establishments in Western Australia was 30·0 per cent of the Australian total, whereas value added by manufacturing establishments in Western Australia was only 4·9 per cent of the total for Australia as a whole. Nevertheless, in absolute terms, manufacturing is an important part of the Western Australian economy. In 1971-72 value added by manufacturing establishments in Western Australia was \$472 million, compared with value added by mining establishments of \$430 million and net value of production of the other primary industries of \$364 million.

Due to a major change in the basis of defining and recording manufacturing statistics which occurred in 1968-69, it is not possible to compare the statistics in this Part with previously recorded manufacturing statistics. However, the statistics up to 1967-68, which are available in the Statistical Summary following Chapter X and in earlier issues of the Year Book, provide a consistent historical record back to the year 1900. At that time 632 factories employing 11,166 persons were recorded, compared with 5,404 factories in 1967-68, employing 67,335 persons.

Up to the period after the second World War, manufacturing in Western Australia had grown steadily with some surge in growth during each of the World Wars, and a pronounced down-turn during the depression of the early 1930s. Most of the factories were small and medium-sized establishments supplying the small local market and carrying out some processing of the State's primary products for export. Heavy industry and large-scale operations have been a more recent development although it could be said that heavy industry commenced with the establishment in 1948 of the State Government's wood distillation, charcoal, iron and steel plant at Wundowie, east of Perth in the Shire of Northam. However, perhaps the most significant change came when the basis for an integrated industrial complex was provided with the opening in 1954 of a large oil refinery at Kwinana, on Cockburn Sound south of Perth. This was followed soon after by a steel rolling mill and later by a series of large plants which have made Kwinana the State's major industrial centre. The interrelated complex of metals, fuels and chemicals plants is served by a fine harbour, the standard gauge railway line linked with mining centres and the other States, and a pipeline from the natural gasfields north of Perth.

The major part of the more recent development of heavy industry in Western Australia has been associated with mineral development. Three of the plants in the Kwinana complex are directly concerned with minerals processing. A blast furnace, which began operating in 1968, uses iron ore and fines from Koolyanobbing, some 300 miles to the east along the standard gauge railway line, in the Eastern Goldfields Statistical Division. An alumina refinery, which commenced operations in 1964, processes bauxite mined in the Darling Range and railed about thirty miles from a crushing plant at Jarrahdale. A nickel refinery, which commenced operations in 1970, processes nickel concentrates trans-

ported by road and rail from Kambalda to the south of Kalgoorlie and more than 400 miles distant in the Eastern Goldfields Statistical Division. Major minerals processing plants outside Kwinana include two plants pelletising iron ore fines in the Pilbara—one at Dampier and the other at Cape Lambert, which commenced operations in 1968 and 1972, respectively. A nickel smelter, to produce nickel matte from concentrates produced at Kambalda, commenced operations at Kalgoorlie in 1973 and another alumina refinery, at Pinjarra, fifty-four miles south of Perth in the South-West Statistical Division, began operating in 1972. In the same Division, a plant at Bunbury to extract titanium dioxide from mineral sands mined in the surrounding districts has been in operation since 1963.

Besides providing for heavy industry directly associated with minerals processing, the mining developments of recent years have also given impetus to other manufacturing activity, particularly to industries associated with the provision of capital equipment and other manufactured goods to the major mining projects.

Manufacturing in Western Australia has become increasingly important in recent years, mainly as a result of the commencement of large-scale heavy industry based primarily on the processing of the State's mineral wealth. The long-established industries such as slaughtering, dairy products processing, brewing, baking, sawmilling, printing, building materials production, and the various types of fabrication and engineering remain as important elements of Western Australian manufacturing, but the most recent steps in development have been based on minerals processing and the associated basic metals and chemical industries.

Government planning for major industrial development in Western Australia is the function of the Department of Development and Decentralisation. Further reference to the functions and activities of this Department appears at the end of this Part.

MANUFACTURING STATISTICS

The statistics in this Part are derived mainly from the Censuses of Manufacturing Establishments conducted for the years 1968-69, 1969-70 and 1971-72 as part of a continuing programme of annual and periodic integrated economic censuses. This programme of censuses, which commenced in 1968-69 with censuses covering manufacturing, mining, electricity and gas, wholesale, and retail and selected service establishments, employed standardised concepts for units, classification and data items which changed the scope and definition of the existing manufacturing statistics, so that data presented in this Part are not directly comparable with manufacturing statistics for years prior to 1968-69. Although a manufacturing census was not conducted in 1970-71, it is intended that manufacturing censuses will be conducted annually from 1971-72 onwards.

The statistical unit for which data are reported in the Census of Manufacturing Establishments is the establishment, which covers all the operations carried out under the one ownership at a single physical location. The manufacturing establishment is thus one predominantly engaged in manufacturing but the data reported for it will cover all secondary activities (e.g. wholesaling) carried out at the location. Data relating to separately-located administrative offices and ancillary units (e.g. storage premises, sales branches not holding stocks, etc.) serving the manufacturing establishment and forming part of the business enterprise owning the establishment are included in the census.

The classification of manufacturing establishments to industry is made using the *Australian Standard Industrial Classification (Preliminary Edition) 1969* (ASIC) which is based on a four-tiered structure of industry divisions, sub-divisions, groups and classes, as shown in the example below:

Industry Division	:	C	Manufacturing
Industry Sub-division	:	28	Glass, Clay and Other Non-Metallic Mineral Products
Industry Group	:	281	Glass and Glass Products
Industry Class	:	2811	Plate and Sheet Glass

The statistics in this Part relate mainly to Industry Sub-divisions but information is also available at the Industry Group and Industry Class level.

The term 'manufacturing' is used in the broad sense to relate to the physical or chemical transformation of materials or components into new products. However, certain activities which do not fit easily into this definition are included or excluded from manufacturing according to other criteria. Activities which are *included* as manufacturing are: grading, testing, filtering, cooling and bulk handling of milk; cotton ginning; publishing, electrotyping, signwriting and bookbinding; installation of lifts and escalators; repair activity usually associated with manufacturing (e.g. engine reconditioning, repair of industrial machinery, ship repair and major repair of aircraft and railway rolling stock); and blending, assembly, bottling and repacking, except where otherwise stated. Activities which are *excluded* from manufacturing are washing, packing and dehydrating of fresh fruit; sun-drying of fruit; cleaning, filleting or freezing of fish; pulping of eggs; bottling of wine and spirits; repacking of flour, cereal food products and dried fruits; blending or repacking of tea; the making or installation of curtains; custom tailoring and dressmaking; boot and shoe repairs; hewing or rough-shaping of railway sleepers, posts, etc. in the forest; installation of joinery and erection of prefabricated wooden buildings; screening, crushing, dressing or other rudimentary treatment of minerals and construction materials; purification of natural gas; blending of lubricating oils and greases; glazing; motor vehicle repair (except engine reconditioning); repair of household appliances, sporting and photographic equipment, watches, clocks and jewellery, etc.; repair of tractors, and farm and construction machinery; and installation of structural steel, air-conditioning and heating equipment, industrial furnaces or shop fittings.

In the Australian Standard Industrial Classification, production of electricity and gas is not regarded as manufacturing but is included in a separate Industry Division (Division D: Electricity, Gas and Water). Separate Censuses of Electricity and Gas Establishments were conducted in 1968-69 and 1969-70, further details of which appear in the section *Electricity and Gas* on pages 402-3.

GENERAL SUMMARY

The following tables summarise the results for Western Australia of the Censuses of Manufacturing Establishments conducted for the years 1968-69, 1969-70 and 1971-72. The data presented are for industry sub-divisions. Details of production of selected commodities appear on page 401.

Number of Manufacturing Establishments

In the next table comparisons of the number of manufacturing establishments in Western Australia over a three-year period are made. The figures represent the number of manufacturing establishments which were in operation at the end of June each year but do not include numbers of separately-located administrative offices and ancillary units.

MANUFACTURING ESTABLISHMENTS ACCORDING TO INDUSTRY SUB-DIVISION

Industry sub-division		Number of establishments in operation at end of June—		
ASIC code (a)	Description	1969	1970	1972
21-2	Food, beverages and tobacco	476	453	423
23	Textiles	33	34	31
24	Clothing and footwear	71	73	65
25	Wood, wood products and furniture	556	590	561
26	Paper and paper products, printing	183	196	228
27	Chemical, petroleum and coal products	69	73	78
28	Non-metallic mineral products	197	210	211
29	Basic metal products	31	32	44
31	Fabricated metal products	397	437	473
32	Transport equipment	133	147	141
33	Other machinery and equipment	268	279	285
34	Miscellaneous manufacturing	171	181	187
	Total manufacturing	2,585	2,705	2,727

(a) Australian Standard Industrial Classification.

Persons Employed

Details of the average number of persons employed in Western Australia in manufacturing establishments appearing in the following table relate to working proprietors and employees on the pay-roll, including those working at separately-located administrative offices and ancillary units in the State, even though the administrative offices or ancillary units may have served establishments located in another State. Average employment figures are expressed as an average 'over the whole year'. Thus, a manufacturing establishment which operates for only six months of the year and employs twenty persons throughout that period has an average employment of only ten 'over the whole year'.

The largest volume of employment was provided in the industry sub-division 'Food, beverages and tobacco' with an average of 13,600 persons employed over 1971-72.

PERSONS EMPLOYED ACCORDING TO INDUSTRY SUB-DIVISION

Industry sub-division		Persons employed (including working proprietors)—average over whole year		
ASIC code (a)	Description	1968-69	1969-70	1971-72
MALES				
21-2	Food, beverages and tobacco	8,593	8,828	9,465
23	Textiles	549	569	457
24	Clothing and footwear	354	321	297
25	Wood, wood products and furniture	7,066	7,155	6,699
26	Paper and paper products, printing	3,673	4,046	4,260
27	Chemical, petroleum and coal products	2,860	2,982	2,711
28	Non-metallic mineral products	4,426	4,687	4,200
29	Basic metal products	3,550	3,719	4,721
31	Fabricated metal products	6,898	7,362	7,827
32	Transport equipment	4,408	4,573	4,815
33	Other machinery and equipment	5,456	5,477	5,379
34	Miscellaneous manufacturing	1,178	1,244	1,218
	Total manufacturing	49,011	50,963	52,049
FEMALES				
21-2	Food, beverages and tobacco	3,451	3,738	4,135
23	Textiles	301	306	227
24	Clothing and footwear	1,642	1,581	1,443
25	Wood, wood products and furniture	897	983	1,066
26	Paper and paper products, printing	1,252	1,417	1,579
27	Chemical, petroleum and coal products	364	407	370
28	Non-metallic mineral products	454	502	424
29	Basic metal products	161	211	375
31	Fabricated metal products	917	1,023	1,023
32	Transport equipment	165	195	228
33	Other machinery and equipment	761	759	754
34	Miscellaneous manufacturing	477	512	544
	Total manufacturing	10,842	11,634	12,168
TOTAL				
21-2	Food, beverages and tobacco	12,044	12,566	13,600
23	Textiles	850	875	684
24	Clothing and footwear	1,996	1,902	1,740
25	Wood, wood products and furniture	7,963	8,138	7,765
26	Paper and paper products, printing	4,925	5,463	5,839
27	Chemical, petroleum and coal products	3,224	3,389	3,081
28	Non-metallic mineral products	4,880	5,189	4,624
29	Basic metal products	3,711	3,930	5,096
31	Fabricated metal products	7,815	8,385	8,850
32	Transport equipment	4,573	4,768	5,043
33	Other machinery and equipment	6,217	6,236	6,133
34	Miscellaneous manufacturing	1,655	1,756	1,762
	Total manufacturing	59,853	62,597	64,217

(a) Australian Standard Industrial Classification.

Wages and Salaries

The following table shows, for 1968-69, 1969-70 and 1971-72 the amounts of wages and salaries paid to all employees of manufacturing establishments in Western Australia including those working at separately-located administrative offices and ancillary units in the State. The figures do not include amounts drawn by working proprietors.

WAGES AND SALARIES PAID
ACCORDING TO INDUSTRY SUB-DIVISION
(Excludes amounts drawn by working proprietors)
(\$'000)

Industry sub-division		1968-69	1969-70	1971-72
ASIC code (a)	Description			
21-2	Food, beverages and tobacco	33,723	40,227	50,719
23	Textiles	2,241	2,451	2,754
24	Clothing and footwear	3,429	3,553	4,049
25	Wood, wood products and furniture	21,283	23,286	25,749
26	Paper and paper products, printing	16,092	18,647	22,625
27	Chemical, petroleum and coal products	12,342	13,861	15,145
28	Non-metallic mineral products	16,939	19,469	20,496
29	Basic metal products	15,677	17,340	28,012
31	Fabricated metal products	24,029	28,391	35,568
32	Transport equipment	13,567	15,236	19,579
33	Other machinery and equipment	19,753	21,293	25,297
34	Miscellaneous manufacturing	4,095	4,655	5,888
	Total manufacturing	183,168	208,410	255,879

(a) Australian Standard Industrial Classification.

Turnover

The value of turnover of Western Australian manufacturing establishments in 1968-69, 1969-70 and 1971-72 is given in the following table. The figures include sales of goods whether produced by the establishment or not, plus transfers out of goods to other establishments of the same enterprise, plus bounties and subsidies on production, plus all other operating revenue from outside the enterprise (such as commission, repair, and service revenue), plus capital work done for own use, or for rental or lease. Receipts from rent, leasing, interest (other than hire purchase), royalties and the sale of fixed tangible assets are excluded.

Turnover was highest in the industry sub-division 'Food, beverages and tobacco' with a total of \$308,389,000 for 1971-72 out of the aggregate turnover for manufacturing of \$1,240,106,000 for the same year.

TURNOVER
ACCORDING TO INDUSTRY SUB-DIVISION
(\$'000)

Industry sub-division		1968-69	1969-70	1971-72
ASIC code (a)	Description			
21-2	Food, beverages and tobacco	224,284	252,224	308,389
23	Textiles	10,413	10,261	11,382
24	Clothing and footwear	9,164	8,990	9,972
25	Wood, wood products and furniture	84,023	93,051	91,445
26	Paper and paper products, printing	54,437	62,219	70,744
27	Chemical, petroleum and coal products	93,147	93,293	99,752
28	Non-metallic mineral products	76,458	90,120	98,657
29	Basic metal products	120,322	137,831	222,153
31	Fabricated metal products	97,774	114,271	137,676
32	Transport equipment	58,844	71,365	78,656
33	Other machinery and equipment	75,241	76,203	87,905
34	Miscellaneous manufacturing	15,449	18,951	23,376
	Total manufacturing	919,555	1,028,778	1,240,106

(a) Australian Standard Industrial Classification.

Purchases, Transfers In and Selected Expenses

The following table gives details of the value of purchases, transfers in and selected expenses for Western Australia in 1968-69, 1969-70 and 1971-72. The figures include purchases of materials, fuel, power, containers, etc., plus transfers in of goods from other establishments of the enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments.

PURCHASES, TRANSFERS IN AND SELECTED EXPENSES
ACCORDING TO INDUSTRY SUB-DIVISION
(\$'000)

Industry sub-division		1968-69	1969-70	1971-72
ASIC code (a)	Description			
21-2	Food, beverages and tobacco	158,572	174,599	210,588
23	Textiles	6,361	6,092	6,854
24	Clothing and footwear	4,282	4,307	4,251
25	Wood, wood products and furniture	44,718	48,229	45,741
26	Paper and paper products, printing	24,936	29,141	31,593
27	Chemical, petroleum and coal products	56,162	54,565	56,023
28	Non-metallic mineral products	37,536	46,085	50,422
29	Basic metal products	*93,758	*98,158	181,967
31	Fabricated metal products	55,489	66,336	75,422
32	Transport equipment	36,816	47,580	49,937
33	Other machinery and equipment	44,507	46,413	51,697
34	Miscellaneous manufacturing	8,313	10,495	12,965
	Total manufacturing	*571,450	*631,999	777,460

(a) Australian Standard Industrial Classification.

* Revised.

Stocks

Statistics on the value of stocks in Western Australia at 30 June of each of the years 1969, 1970 and 1972 are given in the following table. The figures include all stocks of materials, fuels, etc., work-in-progress and finished goods, whether of own manufacture or purchased for resale, owned by manufacturing establishments whether held at the establishment or at separate locations.

STOCKS
ACCORDING TO INDUSTRY SUB-DIVISION
(\$'000)

Industry sub-division		At 30 June—		
ASIC code (a)	Description	1969	1970	1972
21-2	Food, beverages and tobacco	19,006	19,808	23,552
23	Textiles	2,161	2,357	2,352
24	Clothing and footwear	1,226	1,381	1,595
25	Wood, wood products and furniture	14,190	14,496	15,049
26	Paper and paper products, printing	6,781	7,933	8,984
27	Chemical, petroleum and coal products	18,965	18,813	14,033
28	Non-metallic mineral products	8,211	10,734	12,737
29	Basic metal products	22,388	29,082	38,576
31	Fabricated metal products	15,713	18,123	20,234
32	Transport equipment	6,946	9,799	10,318
33	Other machinery and equipment	15,345	17,767	18,095
34	Miscellaneous manufacturing	2,253	2,702	3,877
	Total manufacturing	133,185	152,994	169,400

(a) Australian Standard Industrial Classification.

Value Added

Value added is calculated by adding to the value of turnover, the increase (or deducting the decrease) in the value of stocks, and deducting the value of purchases, transfers in and selected expenses.

It should be noted that while value added is the basic measure of an industry's contribution to total production it must not be inferred that when salaries and wages are deducted from value added, the whole of the surplus is available for profit. There are many miscellaneous expenses such as depreciation, workers' compensation insurance, other insurance, pay-roll tax, income tax, rates, advertising, interest on borrowed funds, bad debts and other sundry charges which are not taken into account in arriving at value added.

The following table shows value added in Western Australia for each of the years 1968-69, 1969-70 and 1971-72.

VALUE ADDED
ACCORDING TO INDUSTRY SUB-DIVISION
(\$'000)

Industry sub-division		1968-69	1969-70	1971-72
ASIC code (a)	Description			
21-2	Food, beverages and tobacco	67,371	78,224	99,743
23	Textiles	4,131	4,545	5,097
24	Clothing and footwear	5,027	4,818	5,889
25	Wood, wood products and furniture	40,819	45,401	46,279
26	Paper and paper products, printing	29,805	34,064	39,241
27	Chemical, petroleum and coal products	36,444	38,340	42,388
28	Non-metallic mineral products	40,248	46,753	48,201
29	Basic metal products	*31,336	*45,884	44,041
31	Fabricated metal products	43,726	50,105	62,223
32	Transport equipment	22,693	26,161	28,718
33	Other machinery and equipment	32,494	31,965	39,271
34	Miscellaneous manufacturing	7,379	8,741	10,921
Total manufacturing		*361,473	*414,999	472,013

(a) Australian Standard Industrial Classification.

* Revised.

Location of Secondary Industry

A summary of the operations of manufacturing establishments in each Statistical Division in Western Australia during 1971-72 appears in the following table.

MANUFACTURING ESTABLISHMENTS—WESTERN AUSTRALIA
SUMMARY OF OPERATIONS BY STATISTICAL DIVISION, 1971-72

Statistical Division	Number of establishments operating at end of June	Persons employed (average over whole year) (a)	Wages and salaries (b)	Turnover	Stocks at end of June	Value added
Perth Statistical Division	2,146	56,298	\$'000 224,689	\$'000 1,056,759	\$'000 144,338	\$'000 406,152
Other Divisions—						
South-West	216	3,789	13,323	74,503	11,670	29,642
Southern Agricultural	95	1,339	5,127	25,764	3,160	11,007
Central Agricultural	83	844	2,961	12,137	2,029	4,858
Northern Agricultural	64	593	1,999	10,879	1,073	3,750
Eastern Goldfields	66	508	1,830	10,683	1,110	4,431
Central	2	(c)	(c)	(c)	(c)	(c)
North-West	11	82	299	1,702	38	813
Pilbara	31	433	3,467	34,443	2,572	6,370
Kimberley	13	(c)	(c)	(c)	(c)	(c)
Total	581	7,919	31,190	183,347	25,062	65,861
WESTERN AUSTRALIA	2,727	64,217	255,879	1,240,106	169,400	472,013

(a) Includes working proprietors. (b) Excludes amounts drawn by working proprietors. (c) Not available for publication.

The main concentration of the State's manufacturing establishments, including those situated in the developing industrial complex at Kwinana, is located in the Perth Statistical Division, which contains the greatest population, both in number and density. The adjoining South-West Statistical Division ranks next to the Perth Division in total population and number of manufacturing establishments.

The Perth and South-West Divisions together contain approximately three-quarters of the total population of the State. Other factors influencing the concentration of manufacturing industry in the area are the easier availability of raw materials, the provision of adequate power and fuel supplies and a well-developed road and railway system linked with the State's principal port at Fremantle and the port at Bunbury. Electric power is distributed over most of the area through a grid system established by the State Electricity Commission, further details of which are given in the section *Electricity Generation and Transmission* on page 402. The only coal deposits in the State at present being worked are in the South-West Division near Collie, some 120 miles to the south of Perth.

Reference to manufacturing activity in the several Statistical Divisions of the State is also made in the section *Geographical Distribution of Industry* which appears on pages 327-8. The boundaries of each Statistical Division are shown on the maps of the State preceding the *Index*. Details of the individual local government areas of which each Statistical Division was composed at 31 December 1973 are given in a list preceding the *Index*.

Interstate Comparisons

The next table summarises the operations of manufacturing establishments in all States and Territories and for Australia for the years 1968-69, 1969-70 and 1971-72. The proportion of total value added in manufacturing in Australia contributed by Western Australian manufacturing establishments has remained almost constant over recent years, being 4.8 per cent in 1968-69, 5.0 per cent in 1969-70 and 4.9 per cent in 1971-72.

MANUFACTURING ESTABLISHMENTS—AUSTRALIA
SUMMARY OF OPERATIONS ACCORDING TO STATES AND TERRITORIES (*)

State or Territory	Year	Number of establishments operating at end of June	Persons employed (average over whole year) (a)	Wages and salaries (b)	Turnover	Value added
				\$'000	\$'000	\$'000
New South Wales	1968-69	13,633	511,812	1,617,819	7,399,194	3,040,750
	1969-70	13,631	523,743	1,788,101	8,276,873	3,382,266
	1971-72	13,883	516,878	2,163,942	9,292,660	3,946,661
Victoria	1968-69	11,563	431,651	1,342,076	6,335,905	2,541,471
	1969-70	11,394	445,705	1,496,768	6,995,465	2,785,073
	1971-72	11,409	450,189	1,801,386	8,054,732	3,328,003
Queensland	1968-69	4,032	110,232	309,276	1,868,803	659,897
	1969-70	3,848	110,515	332,145	2,021,907	712,900
	1971-72	4,001	114,368	425,939	2,443,420	870,782
South Australia	1968-69	2,994	113,080	347,615	1,584,233	643,079
	1969-70	2,977	118,416	385,779	1,764,380	714,579
	1971-72	2,979	121,636	469,697	1,941,500	802,975
Western Australia	1968-69	2,585	59,853	183,168	919,555	361,473
	1969-70	2,705	62,597	208,410	1,028,778	414,999
	1971-72	2,727	64,217	255,879	1,240,106	472,013
Tasmania	1968-69	951	31,074	95,065	487,109	197,464
	1969-70	945	31,760	102,104	541,636	226,083
	1971-72	933	30,969	119,411	595,612	245,068
Northern Territory	1968-69	69	922	3,607	20,437	9,525
	1969-70	65	944	4,156	20,157	8,608
	1971-72	80	1,194	5,806	28,810	11,329
Australian Capital Territory	1968-69	112	2,653	9,454	31,242	14,819
	1969-70	111	2,960	11,150	36,962	17,236
	1971-72	135	3,333	14,659	50,120	26,406
AUSTRALIA	1968-69	35,939	1,261,277	3,908,078	18,646,479	7,468,477
	1969-70	35,676	1,296,640	4,328,612	20,686,158	8,261,744
	1971-72	36,147	1,302,784	5,256,720	23,636,962	9,703,236

(a) Includes working proprietors.

(b) Excludes amounts drawn by working proprietors.

(*) Figures revised since previous issue.

The importance of each manufacturing sub-division in Western Australia relative to Australia in terms of persons employed and value added is shown in the following table.

**MANUFACTURING ESTABLISHMENTS—WESTERN AUSTRALIA AND AUSTRALIA
PERSONS EMPLOYED AND VALUE ADDED, 1971-72**

Industry sub-division		Persons employed (average over whole year)			Value added		
ASIC code (a)	Description	Western Australia	Australia	Percentage (b)	Western Australia	Australia	Percentage (b)
21-2	Food, beverages and tobacco	13,600	201,590	6.7	\$'000 99,743	\$'000 1,683,852	5.9
23	Textiles	684	55,186	1.2	5,097	333,747	1.5
24	Clothing and footwear	1,740	116,139	1.5	5,889	521,541	1.1
25	Wood, wood products and furniture	7,765	81,084	9.6	46,279	495,919	9.3
26	Paper and paper products, printing	5,839	106,328	5.5	39,241	818,149	4.8
27	Chemical, petroleum and coal products	3,081	65,610	4.7	42,388	804,141	5.3
28	Non-metallic mineral products	4,624	51,328	9.0	48,201	496,349	9.7
29	Basic metal products	5,096	92,848	5.5	44,041	884,188	5.0
31	Fabricated metal products	8,850	120,336	7.4	62,223	823,608	7.6
32	Transport equipment	5,043	151,890	3.3	28,718	1,047,346	2.7
33	Other machinery and equipment	6,133	189,589	3.2	39,271	1,296,970	3.0
34	Miscellaneous manufacturing	1,762	70,856	2.5	10,921	497,427	2.2
	Total manufacturing	64,217	1,302,784	4.9	472,013	9,703,236	4.9

(a) Australian Standard Industrial Classification.

(b) Proportion of Western Australia to Australia.

ARTICLES PRODUCED

The following table lists some of the principal products of secondary industry in the State and shows the quantities produced in each of the five years from 1968-69 to 1972-73. The figures include quantities produced and used in own works.

PRODUCTION OF SELECTED COMMODITIES (a)

Commodity (b)	Unit	1968-69	1969-70	1970-71	1971-72	1972-73
Aerated waters (c)	'000 litres	49,142	54,521	64,755	68,241	75,320
Bacon and ham	tonne	4,310	4,519	4,863	5,116	5,211
Bath heaters—solid fuel	number	4,364	3,886	3,587	2,873	1,220
Batteries—automotive (d)—						
6 volt	number	9,559	6,807	8,306	8,739	10,371
12 volt	number	18,797	13,445	17,052	24,289	28,667
Boots, shoes, sandals and slippers (e)	pair	782,930	795,351	772,738	693,927	606,150
Bran	tonne	17,839	17,137	18,233	15,455	14,473
Bricks—clay (all sizes)	'000	273,078	288,949	240,323	228,942	289,798
Butter (f)	tonne	6,322	5,903	5,425	5,977	5,349
Cheese (g)	tonne	2,022	1,718	1,917	1,979	1,869
Cordials and syrups	'000 litres	2,718	3,328	4,410	6,205	6,574
Electricity generated (government)	mil. kWh	1,902	2,195	2,446	2,671	2,968
Flour—plain (h)	tonne	96,642	92,635	96,411	83,681	76,091
Gas (town) (i)	mil. MJ	1,008	1,108	1,242	11,745	31,680
Hot water systems—domestic (j)—						
Electric	number	10,141	11,879	11,239	9,513	11,044
Other	number	10,612	11,154	10,145	11,213	13,010
Ice cream	'000 litres	14,175	16,016	16,420	16,475	16,039
Mattresses—soft-filled (k)	number	49,233	51,526	54,951	51,216	60,431
Paints—architectural, decorative and industrial (l)	'000 litres (m)			5,093	4,671	5,183
Plaster of paris	tonne	29,704	31,862	29,351	30,570	32,405
Pollard	tonne	15,048	13,921	13,907	13,141	12,796
Powdered milk	tonne	3,253	3,424	3,861	4,980	5,390
Pyjama suits—woven fabric—men's, youths' and boys'	dozen	9,782	8,964	7,456	7,148	7,545
Ready-mixed concrete	'000 cu m	742	900	973	907	859
Shirts (all types)—men's, youths' and boys'	dozen	65,209	66,288	63,052	69,800	67,595
Shorts and knickers—men's, youths' and boys' (n)	number	415,858	378,484	393,950	417,927	354,639
Sleepers, railway—sawn	cu m	72,750	82,840	95,334	75,034	58,582
Soap and soap substitutes (including detergents)	tonne	4,418	4,215	5,327	5,913	6,442
Stock and poultry foods—						
Meat and bone meal	tonne	21,388	27,563	26,665	34,087	36,076
Prepared stock and poultry food (o)	tonne	110,127	116,395	105,658	124,803	134,501
Timber (from local logs)—sawn (p)	cu m	444,325	450,345	448,976	406,995	404,955
Wool—scoured	tonne	14,415	14,940	10,724	16,411	11,750

(a) Some major items of production are not available for publication. (b) Includes quantities produced and used in own works. (c) Canned and bottled only (excludes bulk). (d) Includes rebuilt batteries. (e) Excludes footwear wholly of rubber. (f) Source: Commonwealth Dairy Produce Equilisation Committee Limited. (g) Source: Commonwealth Dairy Produce Equilisation Committee Limited for 1968-69 to 1970-71. From 1971-72, figures supplied by Western Australian Department of Agriculture. (h) Includes atta flour and quantities used for making self-raising flour. (i) Available for issue through mains (includes natural gas from October 1971). (j) Excludes solar absorber units. (k) Includes rubber, plastic foam and sponge. (l) Excludes water paints in powder form, stains and thinners. (m) Not available. (n) Excludes suit shorts and swim shorts. (o) Includes poultry pellets, crumbles, mash, etc. (p) Includes railway sleepers see separate item above) and plywood veneers.

Production of many items is confidential as the Acts under which the statistics are collected require that information supplied on any individual return must be treated as confidential. For this reason it has not been possible to publish some items and consequently the list is incomplete and should not be regarded as an assessment of factory development as a whole.

ELECTRICITY AND GAS

The electricity and gas industries, which are not included with manufacturing in the Australian Standard Industrial Classification, are the subject of a separate census which was conducted for the years 1968-69 and 1969-70 but is to be conducted only periodically in future. Results of the 1968-69 and 1969-70 Censuses of Electricity and Gas Establishments were presented on page 411 of the 1973 Year Book, and results of future censuses will appear in later issues as they become available.

Electricity Generation and Transmission

Prior to the establishment of The State Electricity Commission of Western Australia in 1946, electricity was generated and distributed by a large number of independent power stations. A government-owned steam power station at East Perth supplied the metropolitan area, and small units of the same type, but privately-owned, operated in the major mining centres of Collie and Kalgoorlie. With other minor exceptions the country areas were dependent on internal combustion equipment, owned privately or by local government authorities and supplying either alternating or direct current at various voltages. Since 1946 a number of power stations have been absorbed into the Commission's network and, although there are still some independent operators generating electricity for sale or for their own industrial requirements, the Commission now supplies most of the electricity used in the State and all electricity sold in the metropolitan area. The Commission functions under the *State Electricity Commission Act, 1945-1973* and consists of nine members, including the Chairman, appointed by the Governor. Four of the Commissioners are representatives of consumers, one for the metropolitan area, two for the rest of the State and one representing commercial consumers. Of the remaining five, one is the Under Treasurer of the State or his deputy, one represents employees of the Commission and three are required to be qualified engineers.

In Western Australia electricity is generated principally by steam power stations although in areas remote from the interconnected grid system operated by the Commission, internal combustion equipment is mostly used to provide electricity. The Commission operates oil-burning power stations at East Perth (55 MW), South Fremantle (100 MW) and Kwinana (500 MW) in the metropolitan area, and these stations are interconnected in a grid system with coal-burning country power stations at Bunbury (120 MW) and Muja (240 MW).

Present planning by the Commission provides for increasing the capacity of the Kwinana power station by two 200 MW units by 1976.

The main interconnections are two 132,000 volt transmission lines from the Bunbury power station and two 132,000 volt lines from the Muja power station to terminal substations in the metropolitan area, and a 132,000 volt line from Muja to the Bunbury power station. From the Kwinana power station which is interconnected with the grid system at 132,000 volts a 330,000 volt extra high voltage transmission line is under construction to a terminal in the northern suburbs of Perth. A 132,000 volt transmission system linking substations is being provided to meet the increasing demand for power in the metropolitan area.

In December 1959 an amendment to the State Electricity Commission Act was passed to enable consumers to contribute towards the extension of mains beyond the distance that can be supplied economically by the Commission. At 30 June 1973 nearly 11,000 consumers had been connected in country and metropolitan areas under this Contributory Extension Scheme.

Minor systems which are privately-owned or controlled by local government authorities are being absorbed as the transmission lines extend into the country areas and when this work is completed all except the more sparsely-populated areas of the State will be provided with electric power of standard frequency and voltage.

Remote towns may join a Country Towns' Assistance Scheme whereby facilities are available to enable the generation and supply of electricity in forty-five such towns to be operated on behalf of the local supply authority by the Commission. At 30 June 1973 sixteen towns had been incorporated into the Scheme.

Gas Production

Town gas production in Western Australia ceased in December 1972 with the completion of the conversion of town gas appliances to burn natural gas from the gasfields in the region of Dongara to the north of Perth. These natural gasfields have been proved to have sufficient reserves to supply a limited industrial and domestic market for at least fifteen years at a daily rate of between 70 and 80 million cubic feet.

Simulated natural gas is now being produced and supplied in the Bunbury area by the State Electricity Commission, and tempered liquid petroleum gas is supplied in Albany.

Details of the amount of gas available for issue through mains in the five years ended 1972-73 appear in the table on page 401.

DEPARTMENT OF DEVELOPMENT AND DECENTRALISATION

At the end of the first World War the State Government, with the object of fostering secondary industry, established a Council of Industrial Development. This was succeeded by the Department of Industrial Development and in March 1971 the name was changed to the Department of Industrial Development and Decentralisation.

In November 1971 the State's Co-ordinating and Planning Authority, the Department of Industrial Development and Decentralisation and the North-West Department were integrated in a new Department of Development and Decentralisation.

The Department consists of two divisions, Development and Industries.

The *Division of Development* has the function of planning State development including planning for major industrial development and the provision of suitable sites and services for the transport, water, sewerage, drainage, power, port, housing, education, police, medical and other requirements of expanding industries. It also co-ordinates the provision, by appropriate Government departments and instrumentalities, of capital works required for the above purposes.

The *Division of Industries* carries out broadly the functions of the former Department of Industrial Development and Decentralisation in assisting the expansion of existing secondary industries, encouraging exports, and the general promotion of Western Australian trade and industry. The Division is at the disposal of intending investors requiring advice on such matters as finance and accounting, market research, production problems and the availability of labour.

In certain circumstances, financial assistance, by way of direct loan or guarantee of a loan may be granted under the *Industry (Advances) Act, 1947-1961* to industries which are unable to obtain sufficient capital from normal sources to commence or expand operations.

The Department establishes and maintains a close liaison with industry and with Government departments responsible for the provision of services, information and finance. In all its activities particular emphasis is placed on the attraction of industry into decentralised areas.

The name of the Department reverted to the Department of Industrial Development with effect from 1 May 1974.

CHAPTER IX—TRADE, TRANSPORT AND COMMUNICATION

Part 1—External Trade

Overseas trade statistics are compiled from documents obtained under the Customs Act and supplied to the Australian Bureau of Statistics by the Department of Customs and Excise. Particulars of Western Australia's overseas trade, as presented in this Part, have been prepared from tabulations furnished by the Commonwealth Statistician, Canberra.

Statistics of Western Australia's trade with other Australian States are compiled by the Western Australian Office of the Bureau of Statistics from information contained in documents collected under authority of the *Census and Statistics Act 1905-1973* from importers, exporters, and other persons concerned with the distribution of goods.

Classification of Commodities

On 1 July 1965 a new Australian Customs Tariff was introduced. The nomenclature used in the Tariff is that of the Convention on Nomenclature for the Classification of Goods in Customs Tariffs, an international agreement signed at Brussels on 15 December 1950. The system of naming established by the Convention has come to be known as the 'Brussels Nomenclature'.

From 1 July 1965, imports into Australia have been classified according to an *Australian Import Commodity Classification* of some 5,000 items based on the *United Nations Standard International Trade Classification, Revised*, which closely follows the Brussels tariff nomenclature.

Although the basis of the classification of exports remained unchanged for 1965-66, the export section of the Statistical Classification of Imports and Exports was published separately, with some minor revisions, as the *Australian Export Commodity Classification*. A new Australian Export Commodity Classification of some 2,000 items, based on the Standard International Trade Classification, was introduced on 1 July 1966.

The Standard International Trade Classification consists of 10 broad commodity categories designated 'Sections' and comprising 56 commodity 'Divisions' which are further divided into 177 commodity 'Groups'. The structure of the classification serves to provide a summary of data relating to 1,312 basic items of international trade.

For the purpose of recording details of Western Australia's trade with other Australian States, a revised Interstate Trade Classification based on the new Australian Commodity Classifications, has been prepared in the Western Australian Office of the Bureau. In compiling this document, the basic items of the Australian Classifications have been compressed or expanded, according to their significance in Western Australia's trade.

Valuation of Items of Trade

The procedure adopted to value overseas exports and imports is as follows.

Exports. The recorded value of goods exported includes the cost of containers and outside packages and is determined as follows.

- (a) Goods sold to overseas buyers before export are valued at the Australian f.o.b. ('free on board') port of shipment equivalent of the actual price at which the goods were sold.
- (b) Goods shipped on consignment are valued at the Australian f.o.b. port of shipment equivalent of the price paid for similar goods of Australian origin in the principal markets of the country to which they are dispatched for sale.

Imports. The recorded value of goods imported is the amount on which duty is payable or would be payable if the duty were *ad valorem*. Value for duty is the f.o.b. port of shipment equivalent of either:

- (a) the actual price paid or to be paid by the Australian importer plus any special deduction (transactions value); or
- (b) 'the current domestic value' of the goods in the country of origin; whichever is the higher.

The basis of valuation for exports to other Australian States is f.o.b., or its equivalent, at the point of final shipment.

Statistics of imports from other Australian States are recorded in terms of landed cost.

SUMMARY OF TRADE

Statistics of Western Australia's external trade are presented in the following series of tables. Particulars relate, in all cases, to the year ended 30 June. The figures shown for exports do not include ships' stores, details of which are given in the table on page 417.

VALUE OF INTERSTATE AND OVERSEAS TRADE OF WESTERN AUSTRALIA (\$'000)

Direction of trade	1967-68	1968-69	1969-70	1970-71	1971-72
INTERSTATE—					
Imports	527,052	562,312	640,189	726,778	787,788
Exports	124,505	149,892	149,861	151,093	138,478
Excess of—					
Imports over exports	402,547	412,421	490,328	575,685	649,310
OVERSEAS—					
Imports	206,980	203,533	242,299	278,344	283,263
Exports	475,260	546,366	675,027	862,421	946,504
Excess of—					
Exports over imports	268,280	342,833	432,728	584,077	663,241
TOTAL—					
Imports	734,031	765,846	882,487	1,005,122	1,071,051
Exports	599,765	696,258	824,888	1,013,514	1,084,982
Excess of—					
Imports over exports	134,266	69,588	57,600	8,392	13,931
Exports over imports ....	....	....	....	....	....

DIRECTION OF TRADE

The term *Country of Origin*, as used in recording the statistics of overseas trade, means the country of production; *Country of Destination* means the country to which goods were consigned at the time of export. In compiling statistics of Western Australia's interstate imports and exports, goods are classified according to the State or Territory from which or to which they were consigned.

In the next table details of the value of imports into and exports from Western Australia during the period 1969-70 to 1971-72 are classified according to origin or destination. The value of imports from other Australian States accounted for 72·8 per cent of the total value of imports during the three-year period. Exports to overseas countries represented 85·0 per cent of the total value of exports. Overseas imports during the period were valued at \$804 million, the principal countries of origin being the United Kingdom (19·8 per cent of the total), the United States of America (18·0 per cent), and Japan (17·2 per cent). The value of overseas exports amounted to \$2,484 million and the principal countries of destination were Japan (48·1 per cent), the United States of America (8·82 per cent), and the United Kingdom (6·86 per cent).

Quarterly statistics of Western Australia's trade with other Australian States and with overseas countries are published in the *Quarterly Statistical Abstract*. Annual statistics, in greater detail, appear in the publications *Statistics of Western Australia—Trade (Overseas)* and *Statistics of Western Australia—Trade (Interstate and Overseas)*. These publications are compiled and issued by the Western Australian Office of the Australian Bureau of Statistics.

IMPORTS AND EXPORTS

VALUE OF IMPORTS INTO AND EXPORTS FROM WESTERN AUSTRALIA
CLASSIFIED ACCORDING TO ORIGIN OR DESTINATION
(\$'000)

Origin or destination	Imports			Exports		
	1969-70	1970-71	1971-72	1969-70	1970-71	1971-72
INTERSTATE—						
New South Wales (a)	269,987	315,196	348,598	53,669	53,622	48,352
Victoria	270,332	296,605	317,837	50,424	51,430	43,990
Queensland	19,288	22,590	24,214	8,993	6,233	8,142
South Australia	70,346	80,913	87,068	26,630	27,820	25,797
Tasmania	8,547	10,072	9,403	3,302	2,419	3,676
Northern Territory	1,689	1,402	667	6,842	9,569	8,521
Total, Interstate	640,189	726,778	787,788	149,861	151,093	138,478
OVERSEAS—						
Arab Republic of Egypt (b) .....	....	....	....	1,007	9,729	20,372
Austria	277	295	526	27	78	254
Bahrain	85	....	72	391	1,515	6,461
Belgium-Luxembourg	959	1,012	1,329	8,327	10,256	9,470
Canada	8,015	15,393	11,139	30,141	15,369	18,328
Chile	178	5	4	3	3	4,283
China, People's Republic of	949	1,172	1,353	39,229	19,844	8,662
Christmas Island (Indian Ocean)	2,696	2,137	1,771	1,463	2,016	2,123
Colombia .....	....	4	3	1	....	989
Czechoslovakia	337	346	412	1,500	957	698
Fiji	(c)	(c)	127	87	877	1,254
Finland	673	779	840	20	15	17
France	1,713	2,081	2,200	19,001	19,391	18,775
Germany, Federal Republic of	15,616	11,475	10,833	26,303	40,480	44,600
Greece	85	56	62	2,824	3,749	5,027
Hong Kong	1,777	2,374	2,371	3,455	5,289	4,519
India	1,801	1,630	1,403	4,951	6,872	7,286
Indonesia	358	718	1,031	1,118	1,120	6,087
Iran	2,881	4,270	7,790	2,181	16,790	14,719
Iraq	1,221	3,378	11,017	3	5,514	90
Ireland	279	240	262	395	289	1,379
Italy	5,125	5,368	5,654	17,073	19,232	24,472
Japan	34,455	51,125	53,019	309,266	428,633	457,357
Kenya	71	100	94	490	563	1,256
Korea (North)	(c)	....	....	3,381	684	2,485
Korea, Republic of	45	874	48	111	1,469	8,945
Kuwait	13,797	13,348	9,616	1,144	1,766	2,528
Malaysia	2,878	3,856	2,286	9,482	10,486	15,283
Malta .....	....	(c)	(c)	258	378	990
Mauritius	36	12	1	956	561	1,428
Nauru	4,375	4,558	4,326	....	....	....
Netherlands	4,081	7,534	7,070	7,700	5,564	14,586
New Zealand	2,892	2,953	3,244	3,588	4,306	5,141
Norway	828	1,168	1,344	77	22	943
Pakistan	1,414	1,810	928	866	5,810	460
Peru	4	4	1	20	1,174	3,616
Philippines	102	182	213	375	594	813
Poland	608	346	49	3,057	1,290	2,157
Qatar	8,726	7,746	6,086	419	443	615
Romania	38	17	55	40	2,129	2,191
Singapore	3,585	7,931	14,523	20,611	22,000	25,802
South Africa	1,571	1,513	1,626	1,623	2,022	1,937
Spain	1,026	1,776	1,552	2,438	1,943	3,344
Sri Lanka (d)	1,095	856	832	382	592	350
Sudan	1	2	....	....	3,999	892
Sweden	2,362	3,421	2,814	442	3,163	2,957
Switzerland	1,530	1,835	2,109	87	166	221
Taiwan	362	445	655	3,847	7,465	11,965
Tanzania	231	209	221	175	424	1,661
Thailand	102	122	280	513	2,598	546
Turkey	29	26	29	1,718	1,398	2,229
Union of Arab Emirates (e)	3,041	718	229	1,332	1,318	1,415
Union of Soviet Socialist Republics	37	16	55	13,180	12,063	20,242
United Kingdom	54,396	50,564	53,856	38,338	73,437	58,496
United States of America	46,251	52,846	45,953	68,766	69,126	81,131
Yemen, People's Republic of (f)	2,421	2,618	4,692	1	....	....
Yugoslavia	49	50	53	2,343	1,491	895
Zambia	(c)	....	2	117	1,783	3,445
Other	4,837	5,029	5,200	18,383	12,155	8,327
Total, Overseas	242,299	278,344	283,263	675,027	862,421	946,504
GRAND TOTAL	882,487	1,005,122	1,071,051	824,888	1,013,514	1,084,982

(a) Statistics relating to trade with the Australian Capital Territory are included with those of New South Wales. (b) Formerly described as *United Arab Republic*. (c) Less than \$500. (d) Formerly described as *Ceylon*. (e) Formerly described as *Trucial States*. (f) Formerly described as *South Yemen, Republic of*.

The following table shows the proportional distribution of Western Australia's trade with overseas countries and with Australian States and Territories during each of the years 1969-70 to 1971-72.

VALUE OF IMPORTS INTO AND EXPORTS FROM WESTERN AUSTRALIA
PROPORTIONS ACCORDING TO ORIGIN OR DESTINATION
(Per cent of total)

Origin or destination	Imports			Exports		
	1969-70	1970-71	1971-72	1969-70	1970-71	1971-72
INTERSTATE—						
New South Wales (a)	42.17	43.37	44.25	35.81	35.49	34.92
Victoria	42.23	40.81	40.35	33.65	34.04	31.77
Queensland	3.01	3.11	3.07	6.00	4.13	5.88
South Australia	10.99	11.13	11.05	17.77	18.41	18.63
Tasmania	1.34	1.39	1.19	2.20	1.60	2.65
Northern Territory	0.26	0.19	0.08	4.57	6.33	6.15
Total, Interstate	100.00	100.00	100.00	100.00	100.00	100.00
OVERSEAS—						
Arab Republic of Egypt (b)	0.11	0.11	0.19	0.15	1.13	2.15
Austria	0.04	0.03	0.03	(c)	0.01	0.03
Bahrain	0.40	0.36	0.47	0.06	0.18	0.68
Belgium-Luxembourg	3.31	5.53	3.93	1.23	1.19	1.00
Canada	0.07	(c)	(c)	4.47	1.78	1.94
Chile	0.39	0.42	0.48	(c)	(c)	0.45
China, People's Republic of	0.39	0.42	0.48	5.81	2.30	0.92
Christmas Island (Indian Ocean)	1.11	0.77	0.63	0.22	0.23	0.22
Colombia	(c)	(c)	(c)	(c)	(c)	0.10
Czechoslovakia	0.14	0.12	0.15	0.22	0.11	0.07
Fiji	(c)	(c)	0.04	0.01	0.10	0.13
Finland	0.28	0.28	0.30	(c)	(c)	(c)
France	0.71	0.75	0.78	2.81	2.25	1.98
Germany, Federal Republic of	6.45	4.12	3.82	3.90	4.69	4.71
Greece	0.04	0.02	0.02	0.42	0.43	0.53
Hong Kong	0.73	0.85	0.84	0.51	0.61	0.48
India	0.74	0.59	0.50	0.73	0.80	0.77
Indonesia	0.15	0.26	0.36	0.17	0.13	0.64
Iran	1.19	1.53	2.75	0.32	1.95	1.56
Iraq	0.50	1.21	3.89	(c)	0.64	0.01
Ireland	0.12	0.09	0.09	0.06	0.03	0.15
Italy	2.12	1.93	2.00	2.53	2.23	2.59
Japan	14.22	18.37	18.72	45.82	49.70	48.32
Kenya	0.03	0.04	0.03	0.07	0.07	0.13
Korea (North)	(c)	0.31	0.02	0.50	0.08	0.26
Korea, Republic of	0.02	0.31	0.02	0.02	0.17	0.95
Kuwait	5.69	4.80	3.39	0.17	0.20	0.27
Malaysia	1.19	1.39	0.81	1.40	1.22	1.61
Malta	(c)	(c)	(c)	0.04	0.04	0.10
Mauritius	0.01	(c)	(c)	0.14	0.07	0.15
Nauru	1.81	1.64	1.53	...	...	...
Netherlands	1.68	2.71	2.50	1.14	0.65	1.54
New Zealand	1.19	1.06	1.15	0.53	0.50	0.54
Norway	0.34	0.42	0.47	0.01	(c)	0.10
Pakistan	0.58	0.65	0.33	0.13	0.67	0.05
Peru	(c)	(c)	(c)	(c)	0.14	0.38
Philippines	0.04	0.07	0.08	0.06	0.07	0.09
Poland	0.25	0.12	0.02	0.45	0.15	0.23
Qatar	3.60	2.78	2.15	0.06	0.05	0.06
Romania	0.02	0.01	0.02	0.01	0.25	0.23
Singapore	1.48	2.85	5.13	3.05	2.55	2.73
South Africa	0.65	0.54	0.57	0.24	0.23	0.20
Spain	0.42	0.64	0.55	0.36	0.23	0.35
Sri Lanka (d)	0.45	0.31	0.29	0.06	0.07	0.04
Sudan	(c)	(c)	...	...	0.46	0.09
Sweden	0.97	1.23	0.99	0.07	0.37	0.31
Switzerland	0.63	0.66	0.74	0.01	0.02	0.02
Taiwan	0.15	0.16	0.23	0.57	0.87	1.26
Tanzania	0.10	0.08	0.08	0.03	0.05	0.18
Thailand	0.04	0.04	0.10	0.08	0.30	0.06
Turkey	0.01	0.01	0.01	0.25	0.16	0.24
Union of Arab Emirates (e)	1.26	0.26	0.08	0.20	0.15	0.15
Union of Soviet Socialist Republics	0.02	0.01	0.02	1.95	1.40	2.14
United Kingdom	22.45	18.17	19.01	5.68	8.52	6.18
United States of America	19.09	18.99	16.22	10.19	8.02	8.57
Yemen, People's Republic of (f)	1.00	0.94	1.66	(c)	...	...
Yugoslavia	0.02	0.02	0.02	0.35	0.17	0.09
Zambia	(c)	(c)	(c)	0.02	0.21	0.36
Other	2.00	1.81	1.84	2.72	1.41	0.88
Total, Overseas	100.00	100.00	100.00	100.00	100.00	100.00

(a) Statistics relating to trade with the Australian Capital Territory are included with those of New South Wales. (b) Formerly described as *United Arab Republic*. (c) Less than 0.005 per cent. (d) Formerly described as *Ceylon*. (e) Formerly described as *Trucial States*. (f) Formerly described as *South Yemen, Republic of*.

IMPORTS

The following table shows the value of the principal items of interstate and overseas imports into Western Australia during 1970-71 and 1971-72.

VALUE OF PRINCIPAL IMPORTS INTO WESTERN AUSTRALIA—SELECTED COMMODITIES
(\$'000)

Division	Description	1970-71			1971-72		
		Interstate	Overseas	Total	Interstate	Overseas	Total
00	Animals, live	2,374	12	2,386	2,612	131	2,743
11	Beverages, alcoholic	6,635	1,236	7,872	7,984	1,346	9,330
51	Chemical elements and compounds	6,583	6,363	12,946	5,454	8,252	13,706
27, 56	Fertilisers	125	9,121	9,246	41	7,146	7,186
	Food—						
04	Cereals and cereal preparations	7,133	526	7,659	8,364	522	8,886
06, 07	Confectionery	7,354	152	7,505	8,328	138	8,466
03	Fish and fish preparations	628	3,553	4,181	964	2,982	3,946
05	Fruit, fresh or preserved	7,164	212	7,376	6,272	216	6,488
01	Meat and meat preparations	2,560	113	2,672	3,312	142	3,454
02	Milk and cream	3,639	8	3,647	3,456	(a)	3,456
05	Vegetables, fresh or preserved	5,587	602	6,189	5,968	684	6,651
	Other food	31,456	3,863	35,319	34,189	4,361	38,550
85	Footwear, gaiters and similar articles and parts therefor	9,632	734	10,366	10,812	1,103	11,915
82	Furniture	5,307	461	5,768	4,678	488	5,166
66	Glass and glassware	3,838	1,845	5,683	4,498	1,526	6,024
	Machinery—						
72	Electrical machinery, apparatus and appliances—						
	Batteries	2,779	186	2,965	3,267	221	3,488
	Domestic electrical—						
	Cooking and heating	4,791	113	4,904	5,322	117	5,439
	Refrigerators and parts	*5,766	*612	*6,378	6,280	826	7,106
	Washing machines and parts	*3,969	417	*4,386	4,501	261	4,763
	Power machinery and switchgear	10,210	7,152	17,361	14,643	8,387	23,030
	Telecommunication apparatus	20,314	2,254	22,568	20,122	3,522	23,644
	Wire and cable, insulated	8,406	507	8,912	11,093	527	11,620
71	Other than electric—						
	Agricultural—						
	Tractors	1,619	1,487	3,106	990	1,838	2,828
	Other	5,449	594	6,043	5,571	259	5,830
	Excavating, levelling, tamping and boring, for earth, minerals or ores	14,506	24,400	38,906	11,382	14,480	25,862
	Internal combustion engines	4,368	6,030	10,398	5,639	5,513	11,152
	Lifting, handling, loading or unloading	11,988	2,069	14,057	8,174	1,769	9,942
	Office	3,613	2,148	5,761	3,499	1,451	4,950
	Pumps for liquids	4,174	1,302	5,475	3,377	1,378	4,756
54	Medicinal and pharmaceutical products	15,175	895	16,070	17,882	1,016	18,898
69	Metal manufactures, n.e.i.—						
	Household cooking and heating appliances, non-electrical	2,680	149	2,829	2,754	227	2,982
	Tools	6,833	3,908	10,740	6,507	2,606	9,113
	Metals—						
67	Iron and steel—						
	Pig, ingot and other primary forms	7,264	247	7,511	6,961	176	7,137
	Other	46,012	17,406	63,417	48,954	11,583	60,537
66	Mineral manufactures, non-metallic, n.e.i.	5,815	2,494	8,308	5,863	2,743	8,606
64	Paper, paperboard and manufactures thereof	14,434	5,736	20,170	14,966	5,693	20,659
33	Petroleum and petroleum products	5,057	41,734	46,791	5,472	53,339	58,811
53	Pigments, paints and varnishes	4,408	239	4,647	4,917	209	5,126
89	Plastic articles, n.e.i.	7,644	410	8,054	8,084	382	8,466
58	Plastic materials, regenerated cellulose and artificial resins	9,034	1,827	10,860	10,219	1,812	12,031
89	Printed matter	6,029	2,584	8,612	6,902	3,488	10,390
86	Scientific, medical, optical and photographic equipment	10,014	2,786	12,800	11,664	3,395	15,059
55	Soaps and cleansing preparations	5,635	224	5,859	7,787	148	7,935
65	Textiles and textile manufactures—						
	Bags and sacks	119	1,484	1,604	160	2,030	2,189
	Clothing and clothing accessories	47,013	982	47,995	56,595	1,600	58,195
	Fabrics	10,169	4,221	14,391	10,967	4,149	15,116
	Floor coverings	6,499	2,494	8,993	6,719	2,146	8,865
24	Timber	71	3,611	3,682	60	2,459	2,519
12	Tobacco and tobacco manufactures	15,032	359	15,391	14,305	508	14,812
55	Toilet preparations (except soaps)	9,250	42	9,292	10,651	37	10,688
73	Transport equipment—						
	Road motor vehicles and components	99,010	23,042	122,052	109,138	14,936	124,074
	Other	21,034	21,857	42,891	27,088	29,491	56,579
62	Tyres and tubes	10,121	7,302	17,423	11,698	8,133	19,831
	All other commodities	*160,463	*54,243	*214,706	170,682	61,372	232,054
	TOTAL	726,778	278,344	1,005,122	787,788	283,263	1,071,051

(a) Less than \$500.

* Revised.

The principal imports from each of the Australian States and the Northern Territory are given in the following table.

VALUE OF PRINCIPAL IMPORTS FROM AUSTRALIAN STATES—SELECTED COMMODITIES (\$'000)

Division	Description	1970-71	1971-72						
		Total	N.S.W. (a)	Vic.	Qld	S.A.	Tas.	N.T.	Total
11	Beverages, alcoholic	6,635	1,606	2,494	16	3,826	43	....	7,984
51	Chemical elements and compounds	6,583	2,444	860	732	969	449	....	5,454
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	47,013	20,330	33,459	1,543	1,198	64	....	56,595
55	Essential oils and perfume materials, toilet, polishing and cleansing preparations—								
	Soap and cleansing preparations	5,635	6,393	1,356	(b)	38	(b)	....	7,787
	Toilet preparations (except soaps)	9,250	8,613	1,619	1	417	....	....	10,651
04	Food—								
06, 07	Cereals and cereal preparations	7,133	4,266	3,426	262	313	98	....	8,364
05	Confectionery	7,509	2,721	3,173	....	295	2,139	....	8,328
	Fruit—								
	Dried	1,262	24	670	....	454	8	....	1,156
	Fresh	2,142	692	12	125	513	4	....	1,345
	Other (including nuts)	7,393	603	3,014	1,938	1,532	199	....	7,286
01	Meat and meat preparations	2,560	221	2,724	153	213	1	....	3,312
02	Milk and cream	3,639	314	3,136	4	2	....	....	3,456
	Other food	33,882	6,703	20,313	7,341	1,599	1,506	....	37,463
85	Footwear, gaiters and similar articles and parts therefor	9,632	2,819	6,592	442	938	21	....	10,812
82	Furniture	5,307	1,152	1,873	9	1,643	1	....	4,678
66	Glass and glassware	3,838	2,168	2,256	12	62	....	(b)	4,498
59	Insecticides, fungicides, etc.	2,792	2,896	416	8	42	....	....	3,361
72	Machinery—								
	Electrical machinery, apparatus and appliances—								
	Batteries	2,779	2,171	894	(b)	189	14	....	3,267
	Domestic electrical—								
	Cooking and heating	4,791	3,170	1,705	31	415	(b)	....	5,322
	Refrigerators and parts	5,766	3,594	900	24	1,762	....	....	6,280
	Washing machines and parts	3,969	2,411	140	....	1,951	....	....	4,501
	Electric power machinery and switchgear	10,210	6,880	4,979	808	1,974	2	....	14,643
	Telecommunication apparatus—								
	Radio broadcast receivers	2,479	1,814	492	6	332	....	....	2,645
	Television receivers	3,705	2,388	1,205	....	65	....	....	3,657
	Other	14,129	8,374	4,976	50	418	1	....	13,820
	Wire and cable, insulated	8,406	5,397	5,159	76	460	....	....	11,093
	Other	11,952	6,143	5,158	26	675	24	....	12,026
71	Other than electric—								
	Agricultural—								
	Tractors	1,619	89	770	65	66	1	....	990
	Other	5,449	2,376	2,368	47	780	....	....	5,571
	Excavating, levelling, tamping and boring, for earth, minerals or ores	14,506	6,383	3,050	1,402	545	....	1	11,382
	Other	61,978	30,099	26,740	1,345	6,280	13	85	64,562
54	Medicinal and pharmaceutical products	15,175	13,071	4,253	6	552	....	....	17,882
	Metals—								
67	Iron and steel—								
	Pig, ingot and other primary forms	7,264	251	45	(b)	6,599	66	....	6,961
	Other	46,012	39,484	2,021	22	7,425	....	2	48,954
68	Non-ferrous	13,091	7,478	3,639	138	360	928	....	12,543
64	Paper, paperboard and manufactures thereof	14,434	4,708	6,226	341	1,446	2,246	....	14,966
33	Petroleum and petroleum products	5,057	697	4,419	78	192	....	86	5,472
53	Pigments, paints, varnishes, etc.	4,408	2,479	1,895	104	433	6	....	4,917
58	Plastic materials, regenerated cellulose and artificial resins	9,034	5,410	4,283	12	514	....	....	10,219
86	Scientific, medical, optical and photographic equipment	10,014	5,731	5,529	148	254	2	....	11,664
00	Sheep, live	541	134	36	1	189	112	....	471
65	Textile yarn, fabrics, made-up articles and related products—								
	Fabrics	10,169	4,548	5,624	82	449	264	....	10,967
	Floor coverings and the like	6,499	2,439	4,033	(b)	92	154	....	6,719
	Other	7,607	3,256	3,904	11	1,066	93	....	8,330
12	Tobacco and tobacco manufactures	15,032	2,951	11,248	(b)	100	....	6	14,305
69	Tools	6,833	2,988	2,802	169	544	2	1	6,507
73	Transport equipment—								
	Road motor vehicles and components	99,010	21,667	58,811	1,677	26,733	135	114	109,138
	Other	21,034	22,566	2,274	1,806	440	1	....	27,088
62	Tyres and tubes	10,121	4,536	6,716	....	445	....	....	11,698
	All other commodities	111,500	58,948	44,152	3,147	9,268	808	372	116,696
	TOTAL	726,778	348,598	317,837	24,214	87,068	9,403	667	787,788

(a) Includes the value of imports from the Australian Capital Territory.

(b) Less than \$500.

VALUE OF OVERSEAS IMPORTS FROM PRINCIPAL COUNTRIES OF ORIGIN
DIVISIONS OF THE IMPORT COMMODITY CLASSIFICATION: 1971-72
(\$'000)

Division	Description	United Kingdom	Japan	United States of America	Singapore	Canada	Germany, Federal Republic of	Other	Total
00	Live animals	125	.....	.....	.....	.....	.....	6	131
01	Meat and meat preparations	75	2	1	1	5	1	59	142
02	Dairy products and eggs	2	(a)	.....	.....	.....	16	297	315
03	Fish and fish preparations	530	610	56	37	134	27	1,587	2,982
04	Cereals and cereal preparations	238	19	5	8	(a)	9	243	522
05	Fruit and vegetables	156	20	83	4	31	7	1,233	1,534
06	Sugar, sugar preparations and honey	83	1	3	(a)	1	(a)	55	144
07	Coffee, cocoa, tea, spices and manufactures thereof	21	82	24	15	.....	(a)	1,639	1,782
08	Feeding-stuff for animals (excluding unmilled cereals)	2	41	288	.....	.....	.....	291	622
09	Miscellaneous preparations chiefly for food	724	38	23	35	14	1	168	1,002
11	Beverages	972	2	6	(a)	5	46	320	1,351
12	Tobacco and tobacco manufactures	240	.....	.....	.....	.....	.....	268	508
21	Hides, skins and fur skins, undressed .....	.....	(a)	(a)	(a)	.....	.....	(a)	(a)
22	Oil-seeds, oil nuts and oil kernels	13	(a)	(a)	(a)	3	.....	22	37
23	Crude rubber (including synthetic and reclaimed)	9	.....	16	.....	.....	2	74	101
24	Wood, timber and cork	2	.....	87	71	.....	(a)	(b)2,411	2,572
25	Pulp and waste paper .....	.....	.....	.....	.....	92	.....	494	586
26	Textile fibres and their waste	61	3	(a)	.....	.....	.....	396	459
27	Crude fertilisers and crude minerals (excluding coal, petroleum and precious stones)	42	153	640	.....	3,005	7	(c)6,936	10,783
28	Metalliferous ores and metal scrap	2	16	(a)	.....	(a)	.....	1	19
29	Crude animal and vegetable materials, n.e.i.	117	1	58	7	19	2	212	416
32	Coal, coke and briquettes .....	.....	.....	.....	.....	.....	13	1	14
33	Petroleum and petroleum products	127	8	243	13,249	6	14	39,693	53,339
42	Fixed vegetable oils and fats	16	26	2	18	.....	(a)	(d)398	460
43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin	4	.....	1	.....	.....	2	(a)	7
51	Chemical elements and compounds	592	1,586	4,755	.....	188	243	887	8,252
53	Dyeing, tanning and colouring materials	135	29	48	.....	7	59	159	437
54	Medicinal and pharmaceutical products	138	20	7	(a)	.....	119	731	1,016
55	Essential oils and perfume materials, toilet, polishing and cleansing preparations	78	6	83	(a)	(a)	29	239	435
56	Fertilisers, manufactured	(a)	6	529	.....	.....	170	30	735
57	Explosives and pyrotechnic products	13	1	487	.....	3	(a)	38	542
58	Plastic materials, regenerated cellulose and artificial resins	846	214	263	4	27	181	277	1,812
59	Chemical materials and products, n.e.i.	1,299	61	890	(a)	2	218	122	2,593
61	Leather, leather manufactures, n.e.i. and dressed fur skins	53	41	1	(a)	.....	3	13	110
62	Rubber manufactures, n.e.i.	2,436	3,689	2,568	30	356	166	1,262	10,508
63	Wood and cork manufactures (excluding furniture)	70	59	13	47	(a)	2	665	856
64	Paper, paperboard and manufactures thereof	509	305	110	(a)	2,627	106	2,036	5,693
65	Textile yarn, fabrics, made-up articles and related products	1,957	2,718	490	65	161	218	3,527	9,136
66	Non-metallic mineral manufactures, n.e.i.	1,099	1,102	267	24	3	414	1,374	4,282
67	Iron and steel	1,041	9,083	934	27	7	97	570	11,760
68	Non-ferrous metals	294	11	30	(a)	134	25	37	532
69	Manufactures of metal, n.e.i.	1,297	1,229	1,629	23	38	581	1,650	6,447
71	Machinery, other than electric	17,560	8,619	13,728	493	3,829	3,308	(e)4,537	52,075
72	Electrical machinery, apparatus and appliances	5,168	6,778	2,279	18	162	1,026	(f)2,798	18,229
73	Transport equipment	7,684	13,761	11,453	52	29	2,667	(g)8,782	44,427
81	Sanitary, plumbing, heating and lighting fixtures and fittings	150	41	19	(a)	(a)	17	102	330
82	Furniture	142	58	21	27	8	10	223	488
83	Travel goods, handbags and similar articles	26	88	(a)	6	(a)	3	154	277
84	Clothing and clothing accessories, and articles of knitted or crocheted fabric	859	60	11	60	(a)	5	606	1,600
85	Footwear, gaiters and similar articles and parts therefor	155	132	9	8	.....	15	784	1,103
86	Professional, scientific and controlling instruments; photographic and optical goods; watches and clocks	1,019	331	1,103	(a)	75	286	956	3,770
89	Miscellaneous manufactured articles, n.e.i.	3,487	1,047	735	100	42	260	1,639	7,310
	Other....	2,190	924	1,955	94	124	456	2,938	8,682
	Total	53,856	53,019	45,953	14,523	11,139	10,833	93,939 (h)	283,263

(a) Less than \$500. (b) Includes Malaysia, \$1·81 million. (c) Includes phosphates from Nauru, \$4·32 million; and Christmas Island (Indian Ocean), \$1·77 million. (d) Includes Iraq, \$10·9 million; Kuwait, \$9·62 million; Iran, \$7·57 million; Qatar, \$6·09 million; and People's Republic of Yemen, \$4·31 million. (e) Includes Sweden, \$1·22 million. (f) Includes Italy, \$1·18 million. (g) Includes Netherlands, \$5·00 million; and Italy, \$1·57 million. (h) Includes an amount of \$55·4 million, representing the value of imports detailed in footnotes (b), (c), (d), (e), (f) and (g).

EXPORTS

QUANTITY AND VALUE OF PRINCIPAL EXPORTS FROM WESTERN AUSTRALIA
SELECTED COMMODITIES: 1971-72

Division	Description	Unit	Interstate		Overseas		Total	
			Quantity	Value	Quantity	Value	Quantity	Value
00	Animals (live)—			\$'000		\$'000		\$'000
	Cattle	number	25,980	1,760	422	105	26,402	1,865
	Sheep	number	30	1	599,518	3,870	599,548	3,871
51	Chemical elements and compounds	n.a.	n.a.	14,340	n.a.	63,732	n.a.	78,072
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	n.a.	n.a.	1,344	n.a.	49	n.a.	1,393
26	Cotton fibre	'000 lb	6,121	1,545	1,414	384	7,535	1,929
04	Food—							
	Cereals and cereal preparations—							
	Barley, unmilled	'000 bush	.....	.....	39,655	36,006	39,655	36,006
	Flour of wheat	sh. ton (a)	523	61	20,291	1,285	20,814	1,345
	Oats, unmilled	'000 bush	.....	.....	5,852	3,838	5,852	3,838
	Wheat, unmilled	'000 bush	.....	.....	95,074	128,132	95,074	128,132
03	Fish, fresh, chilled or frozen—							
	Prawns	'000 lb	362	435	2,577	3,712	2,939	4,147
	Rock lobster tails	'000 lb	25	89	7,525	24,537	7,550	24,626
	Other	'000 lb	363	140	1,649	984	2,011	1,123
05	Fruit, fresh—							
	Apples	'000 bush	1	2	1,171	4,116	1,171	4,118
	Other	n.a.	n.a.	297	n.a.	829	n.a.	1,126
06	Honey	'000 lb	4	1	2,597	541	2,600	542
01	Meat, fresh, chilled or frozen—							
	Beef and veal	'000 lb	209	114	53,661	22,414	53,870	22,528
	Lamb	'000 lb	110	29	15,465	2,921	15,575	2,950
	Mutton	'000 lb	466	94	78,745	14,601	79,211	14,695
	Pigmeat	'000 lb	3,344	1,187	2,174	807	5,518	1,995
	Other (b)	'000 lb	843	289	11,071	2,304	11,914	2,593
05	Vegetables, fresh—							
	Potatoes	'000 cwt	87	109	82	263	169	371
	Other	n.a.	n.a.	177	n.a.	969	n.a.	1,146
	Other food	n.a.	n.a.	3,799	n.a.	3,441	n.a.	7,239
85	Footwear, gaiters and similar articles	n.a.	n.a.	1,491	n.a.	2	n.a.	1,493
82	Furniture	n.a.	n.a.	3,395	n.a.	122	n.a.	3,517
99	Gold minted bullion	'000 fine oz	40	1,622	68	2,503	108	4,125
67	Iron and steel (c)	'000 tons	211	12,873	516	23,541	728	36,415
	Machinery—							
72	Electric power machinery and switchgear	n.a.	n.a.	579	n.a.	40	n.a.	619
71	Other than electric—							
	Agricultural—							
	Tractors	n.a.	n.a.	6,364	n.a.	215	n.a.	6,579
	Other	n.a.	n.a.	541	n.a.	19	n.a.	560
	Sorting, screening, crushing, mixing, for earth, stone, ores or other mineral substances	n.a.	n.a.	513	n.a.	107	n.a.	620
	Other	n.a.	n.a.	6,172	n.a.	2,260	n.a.	8,432
28	Metal waste and scrap	'000 cwt	132	2,230	961	1,879	1,093	4,109
27	Minerals, crude—							
	Salt	'000 cwt	(d)	1	42,683	6,468	42,683	6,469
28	Ores, metalliferous—							
	Copper	'000 cwt	51	858	.....	.....	51	858
	Ilmenite	'000 tons	50	538	527	7,799	576	8,337
	Iron	'000 tons	2,634	16,038	45,256	331,462	47,890	347,500
	Manganese	'000 tons	.....	.....	127	2,005	127	2,005
	Tin	'000 cwt	3	358	17	1,685	21	2,043
	Other	'000 cwt	n.a.	5	n.a.	38,615	n.a.	38,621
64	Paper, paperboard and manufactures thereof	n.a.	n.a.	999	n.a.	205	n.a.	1,204
33	Petroleum and petroleum products	n.a.	n.a.	29,490	n.a.	12,442	n.a.	41,932
62	Rubber manufactures, n.e.i.	n.a.	n.a.	364	n.a.	20	n.a.	383
68	Silver bullion	'000 fine oz	.....	.....	2,374	3,054	2,374	3,054
21	Skins and hides—							
	Bovine	'000 lb	2,425	397	9,375	1,328	11,800	1,725
	Sheep and lamb	'000 lb	181	39	22,571	3,264	22,752	3,303
	Other	n.a.	n.a.	272	n.a.	55	n.a.	327
41	Tallow	'000 cwt	7	50	507	3,631	514	3,681
24	Timber—							
	Sleepers, railway	'000 sup. ft	3,998	565	15,696	2,653	19,694	3,218
	Other	'000 sup. ft	18,958	2,299	4,225	923	23,182	3,221
73	Transport equipment	n.a.	n.a.	2,750	n.a.	11,760	n.a.	14,510
63	Veneers, plywood boards and reconstituted wood	n.a.	n.a.	2,177	n.a.	75	n.a.	2,251
26	Wool—							
	Degreased (washed, scoured, etc.)	tonne	386	308	13,094	10,890	13,481	11,197
	Greasy (including slip)	tonne	5,224	4,169	140,579	105,094	145,803	109,263
	Other	tonne	32	22	1,849	2,694	1,881	2,716
	All other commodities	n.a.	n.a.	15,186	n.a.	49,854	n.a.	65,040
	TOTAL	n.a.	n.a.	138,478	n.a.	946,504	n.a.	1,084,982

n.a. denotes 'not applicable' or 'not available'.

(a) Short ton = 2,000 lb.
basic shapes and sections.(b) Includes edible offals, poultry, rabbits and buffalo.
(d) Less than 500.

(c) Principally pig-iron, cast iron,

The following table shows the value and proportion of the principal items exported overseas and interstate during 1971-72.

VALUE OF PRINCIPAL EXPORTS FROM WESTERN AUSTRALIA
SELECTED COMMODITIES: 1971-72

Division	Description	Value (\$'000)			Proportion of total (per cent)		
		Interstate	Overseas	Total	Interstate	Overseas	Total
00	Animals (live)—						
	Cattle	1,760	105	1,865	1.27	0.01	0.17
	Sheep	1	3,870	3,871	(a)	0.41	0.36
51	Chemical elements and compounds	14,340	63,732	78,072	10.36	6.73	7.20
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	1,344	49	1,393	0.97	0.01	0.13
26	Cotton fibre	1,545	384	1,929	1.12	0.04	0.18
	Food—						
04	Cereals and cereal preparations—						
	Barley, unmilled .....	...	36,006	36,006	(a)	3.80	3.32
	Flour of wheat	61	1,285	1,345	0.04	0.14	0.12
	Oats, unmilled .....	...	3,838	3,838	(a)	0.41	0.35
	Wheat, unmilled .....	...	128,132	128,132	(a)	13.54	11.81
03	Fish, fresh, chilled or frozen—						
	Prawns	435	3,712	4,147	0.31	0.39	0.38
	Rock lobster tails	89	24,537	24,626	0.06	2.59	2.27
	Other	140	984	1,123	0.10	0.10	0.10
05	Fruit, fresh—						
	Apples	2	4,116	4,118	(a)	0.43	0.38
	Other	297	829	1,126	0.21	0.09	0.10
06	Honey	1	541	542	(a)	0.06	0.05
01	Meat, fresh, chilled or frozen—						
	Beef and veal	114	22,414	22,528	0.08	2.37	2.08
	Lamb	29	2,921	2,950	0.02	0.31	0.27
	Mutton	94	14,601	14,695	0.07	1.54	1.35
	Pigmeat	1,187	807	1,995	0.86	0.09	0.18
	Other (b)	289	2,304	2,593	0.21	0.24	0.24
05	Vegetables, fresh—						
	Potatoes	109	263	371	0.08	0.03	0.03
	Other	177	969	1,146	0.13	0.10	0.11
	Other food	3,799	3,441	7,239	2.74	0.36	0.67
85	Footwear, gaiters and similar articles	1,491	2	1,493	1.08	(a)	0.14
82	Furniture	3,395	122	3,517	2.45	0.01	0.32
99	Gold mint bullion	1,622	2,503	4,125	1.17	0.26	0.38
67	Iron and steel (c)	12,873	23,541	36,415	9.30	2.49	3.36
	Machinery—						
72	Electric power machinery and switchgear	579	40	619	0.42	(a)	0.06
71	Other than electric—						
	Agricultural—						
	Tractors	6,364	215	6,579	4.60	0.02	0.61
	Other	541	19	560	0.39	(a)	0.05
	Sorting, screening, crushing, mixing, for earth, stone, ores or other mineral substances	513	107	620	0.37	0.01	0.06
	Other	6,172	2,260	8,432	4.46	0.24	0.78
28	Metal waste and scrap	2,230	1,879	4,109	1.61	0.20	0.38
27	Minerals, crude—						
	Salt	1	6,468	6,469	(a)	0.68	0.60
28	Ores, metalliferous—						
	Copper	858	...	858	0.62	(a)	0.08
	Ilmenite	538	7,799	8,337	0.39	0.82	0.77
	Iron	16,038	331,462	347,500	11.58	35.02	32.03
	Manganese .....	...	2,005	2,005	(a)	0.21	0.18
	Tin	358	1,685	2,043	0.26	0.18	0.19
	Other	5	38,615	38,621	(a)	4.08	3.56
64	Paper, paperboard and manufactures, thereof	999	205	1,204	0.72	0.02	0.11
33	Petroleum and petroleum products	29,490	12,442	41,932	21.30	1.31	3.86
62	Rubber manufactures, n.e.i.	364	20	383	0.26	(a)	0.04
68	Silver bullion .....	...	3,054	3,054	(a)	0.32	0.28
21	Skins and hides—						
	Bovine	397	1,328	1,725	0.29	0.14	0.16
	Sheep and lamb	39	3,264	3,303	0.03	0.34	0.30
	Other	272	55	327	0.20	0.01	0.03
41	Tallow	50	3,631	3,681	0.04	0.38	0.34
24	Timber—						
	Sleepers, railway	565	2,653	3,218	0.41	0.28	0.30
	Other	2,299	923	3,221	1.66	0.10	0.30
73	Transport equipment	2,750	11,760	14,510	1.99	1.24	1.34
63	Veneers, plywood boards and reconstituted wood	2,177	75	2,251	1.57	0.01	0.21
26	Wool—						
	Degreased (washed, scoured, etc.)	308	10,890	11,197	0.22	1.15	1.03
	Greasy (including slipe)	4,169	105,094	109,263	3.01	11.10	10.07
	Other	22	2,694	2,716	0.02	0.28	0.25
	All other commodities	15,186	49,854	65,040	10.97	5.27	5.99
	TOTAL	138,478	946,504	1,084,982	100.00	100.00	100.00

(a) Less than 0.005 per cent.
iron, basic shapes and sections.

(b) Includes edible offals, poultry, rabbits and buffalo.

(c) Principally pig-iron cast

VALUE OF PRINCIPAL EXPORTS TO AUSTRALIAN STATES—SELECTED COMMODITIES
(\$'000)

Division	Description	1970-71	1971-72						Total
		Total	N.S.W. (a)	Vic.	Qld	S.A.	Tas.	N.T.	
00	Animals (live)—								
	Cattle	1,115	29	....	410	557	....	764	1,760
	Sheep	6	....	1	....	(b)	....	....	1
51	Chemical elements and compounds	15,955	1,880	11,487	587	332	55	(b)	14,340
84	Clothing and clothing accessories and articles of knitted or crocheted fabric	790	446	355	217	282	20	24	1,344
29	Crude animal and vegetable materials, n.e.i.—								
	Animal casings (sausage), etc.	239	278	1	3	65	....	....	347
	Clover seed	260	14	47	....	74	....	....	136
	Food—								
02	Butter	321	....	5	....	....	....	287	292
06	Confectionery, excluding chocolate	321	110	220	40	62	10	(b)	442
03	Fish and fish preparations—								
	Fresh, chilled or frozen	1,423	114	462	14	73	(b)	2	666
	Canned or bottled, n.e.i., and fish preparations	791	226	185	....	100	....	1	513
01	Meat and meat preparations—								
	Fresh, chilled or frozen	1,301	765	352	203	25	....	370	1,714
	Other	331	1	10	....	36	....	284	331
05	Vegetables, fresh—								
	Potatoes (except sweet potatoes)	156	75	9	1	15	....	9	109
	Other	141	....	7	....	164	....	5	177
	Other food	1,559	984	655	65	551	2	323	2,580
85	Footwear, gaiters and similar articles	1,487	695	236	314	154	85	7	1,491
82	Furniture	2,121	1,275	971	536	564	29	20	3,395
99	Gold bullion	3,041	1,622	....	....	....	....	....	1,622
21	Hides, skins and fur skins, undressed—								
	Bovine	270	20	164	....	213	....	....	397
	Sheep and lamb	24	....	9	....	30	....	....	39
	Other	460	184	7	10	71	....	....	272
	Machinery—								
72	Electrical machinery and apparatus—								
	Electric power machinery (c)	790	169	252	21	135	(b)	1	579
	Other	259	101	113	56	84	7	7	367
71	Other than electric—								
	Agricultural—								
	Tractors	2,918	1,390	1,318	1,129	2,527	....	....	6,364
	Other	317	238	68	136	98	1	(b)	541
	Sorting, screening, crushing, mixing, for earth, stone, ores or other mineral substances	849	137	178	85	69	14	31	513
	Other	6,655	2,138	1,835	1,022	933	103	142	6,172
28	Metalliferous ores and metal scrap—								
	Ores, metalliferous—								
	Ilmenite	567	....	....	....	....	538	....	538
	Iron	14,101	16,038	....	....	....	....	....	16,038
	Manganese .....	....	....	....	....	....	....	....	....
	Tin	240	358	....	....	....	....	....	358
	Other	1,088	858	5	....	....	....	....	863
	Metal waste and scrap—								
	Ferrous	17	90	9	....	....	....	....	99
	Non-ferrous	2,484	1,180	662	....	288	....	....	2,130
69	Metal manufactures, n.e.i.—								
	Household equipment of base metals	27	9	1	(b)	13	....	5	27
	Other	1,697	507	283	68	494	112	109	1,572
	Metals—								
67	Iron and steel (d)	13,421	4,268	2,924	551	4,455	33	642	12,873
33	Petroleum and petroleum products	39,769	3,403	10,788	1,040	8,322	2,199	3,738	29,490
62	Rubber manufactures, n.e.i.	1,594	201	43	12	83	24	(b)	364
26	Textile fibres and their waste—								
	Cotton fibre	1,348	1,545	....	....	....	....	....	1,545
	Wool—								
	Degreased (washed, scoured, etc.)....	1,116	....	271	26	11	....	....	308
	Greasy (including slipe)	5,016	248	3,539	68	314	....	....	4,169
	Other	152	22	....	....	....	....	....	22
24	Timber—								
	Sleepers, railway	585	(b)	....	....	563	....	2	565
	Other	2,088	360	294	....	1,424	....	220	2,299
73	Transport equipment—								
	Road motor vehicles (e)	953	241	271	172	105	7	11	807
	Other	2,058	789	487	260	94	262	50	1,942
63	Wood and cork manufactures (f)—								
	Veneers, plywood boards, etc.	2,020	518	738	3	817	42	60	2,177
	Cork manufactures	446	121	88	74	18	....	1	301
	Other	68	....	61	13	(b)	....	1	75
	All other commodities	16,334	4,705	4,577	1,006	1,582	133	1,408	13,411
	TOTAL	151,093	48,352	43,990	8,142	25,797	3,676	8,521	138,478

(a) Includes the value of exports to the Australian Capital Territory. (b) Less than \$500. (c) Including switchgear.
(d) Principally pig-iron, cast iron, basic shapes and sections. (e) Including components. (f) Excluding furniture.

The value of overseas exports from Western Australia to the principal countries of destination in 1971-72 is given in the following table.

VALUE OF OVERSEAS EXPORTS TO PRINCIPAL COUNTRIES OF DESTINATION
DIVISIONS OF THE EXPORT COMMODITY CLASSIFICATION: 1971-72
(\$'000)

Division	Description	Japan	United States of America	United Kingdom	Germany, Federal Republic of	Singapore	Italy	Other	Total
00	Live animals					1,415		2,991	4,406
01	Meat and meat preparations	5,920	15,659	5,873	113	2,763	23	12,843	43,193
02	Dairy products and eggs	520		26	6	259	44	279	1,135
03	Fish and fish preparations	3,181	24,788	484	6	113		663	29,234
04	Cereals and cereal preparations	39,897	349	15,712	4,734	2,381	2,715	104,409	170,197
05	Fruit and vegetables		267	2,429	128	2,450		1,118	6,392
06	Sugar, sugar preparations and honey	28	17	180	23	70		238	557
07	Coffee, cocoa, tea, spices and manufactures thereof							15	15
08	Feeding-stuff for animals (excluding unmilled cereals)	589		58	(b)	117		173	937
09	Miscellaneous preparations chiefly for food				(b)	1		38	39
11	Beverages	6	2	40	(b)	68	1	337	454
12	Tobacco and tobacco manufactures	(b)	1			(b)		28	29
21	Hides, skins and fur skins, undressed	96	2	132	443	12	463	3,498	4,647
22	Oil-seeds, oil nuts and oil kernels	1,371						(b)	1,371
24	Wood, timber and cork	(b)	(b)	2,441	38		(b)	1,096	3,576
25	Pulp and waste paper					5		54	60
26	Textile fibres and their waste	49,666	1,390	5,677	17,489	(b)	6,602	(c)38,295	119,120
27	Crude fertilisers and crude minerals (excluding coal, petroleum and precious stones)	6,892	19	(b)	37	27		925	7,899
28	Metalliferous ores and metal scrap	306,733	9,302	7,706	11,826	339	10,828	(d)36,711	383,446
29	Crude animal and vegetable materials, n.e.i.	130	150	214	92	209	41	500	1,335
32	Coal, coke and briquettes	64							64
33	Petroleum and petroleum products	993	(b)	4,005	546	51	519	6,327	12,442
41	Animal oils and fats	1,106	75	1,118	136	745		1,659	4,839
43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin	1		8		(b)			10
51	Chemical elements and compounds	26,676	27,366	17	2	96		(e)9,575	63,732
52	Mineral tar and crude chemicals from coal, petroleum and natural gas								
53	Dyeing, tanning and colouring materials	8	134	5	12	492	7	1,086	1,745
54	Medicinal and pharmaceutical products					12		27	38
55	Essential oils and perfume materials, toilet, polishing and cleansing preparations	4	53	82	11	25	38	186	399
56	Fertilisers, manufactured		134					148	282
57	Explosives and pyrotechnic products							8	8
58	Plastic materials, regenerated cellulose and artificial resins	1				(b)		21	22
59	Chemical materials and products, n.e.i.		7	141	2	4		11	164
61	Leather, leather manufactures, n.e.i. and dressed fur skins	9		10	2	209	(b)	143	372
62	Rubber manufactures, n.e.i.	(b)		1		1		18	20
63	Wood and cork manufactures (excluding furniture)	1	10	11		53		162	237
64	Paper, paperboard and manufactures thereof	(b)			(b)	63		142	205
65	Textile yarn, fabrics, made-up articles and related products	3	(b)	3		2	(b)	24	32
66	Non-metallic mineral manufactures, n.e.i.	76	49	11	24	89	(b)	298	547
67	Iron and steel	11,618		(b)	114	22	2,478	(f)9,308	23,541
68	Non-ferrous metals	293		10,989	8,736	77	698	(g)13,919	34,713
69	Manufactures of metal, n.e.i.	7	40	14	27	57	1	215	361
71	Machinery, other than electric	40	269	132	2	515	(b)	1,644	2,601
72	Electrical machinery, apparatus and appliances	1	24	6	1	42	1	227	302
73	Transport equipment	926	568	32		9,530	4	700	11,760
81	Sanitary, plumbing, heating and lighting fixtures and fittings			1		36		63	100
82	Furniture			(b)		11		111	122
84	Clothing and clothing accessories, and articles of knitted or crocheted fabric	(b)	1	1	(b)	20		28	49
86	Professional, scientific and controlling instruments; photographic and optical goods; watches and clocks	6	33	57	23	195		105	419
89	Miscellaneous manufactured articles, n.e.i.	2	4	96	3	4		67	176
	Other	481	421	784	22	3,222	7	4,220	9,158
	TOTAL	457,347	81,131	58,496	44,600	25,802	24,472	254,654	946,504

(a) Includes Arab Republic of Egypt, \$19.9 million; Iran, \$11.8 million; Taiwan, \$9.98 million; U.S.S.R., \$8.96 million; Republic of Korea, \$8.94 million; Malaysia, \$8.13 million; Indonesia, \$4.51 million; Chile, \$4.28 million; and Zambia, \$3.36 million.
 (b) Less than \$500.
 (c) Includes U.S.S.R., \$10.3 million; France, \$7.98 million; India, \$3.52 million; and Netherlands, \$3.16 million.
 (d) Includes Canada, \$15.7 million; Belgium-Luxembourg, \$6.40 million; and France, \$6.08 million.
 (e) Includes Bahrain, \$5.94 million.
 (f) Includes People's Republic of China, \$7.64 million.
 (g) Includes Netherlands, \$8.60 million.
 (h) Includes an amount of \$155.1 million, representing the value of exports detailed in footnotes (a), (c), (d), (e), (f) and (g).

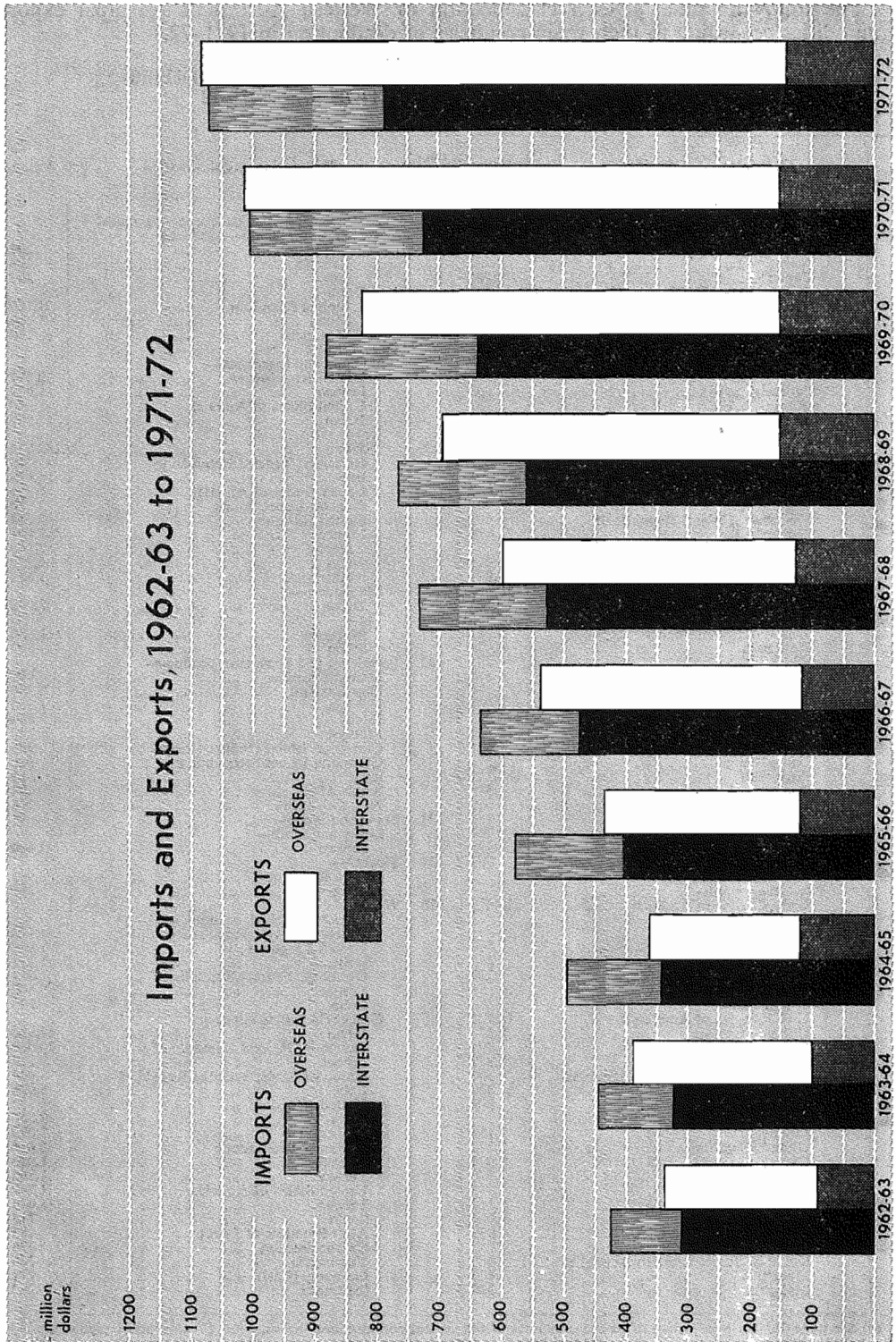
The following table gives a classification of Western Australia's principal export commodities according to their main countries of destination in 1971-72.

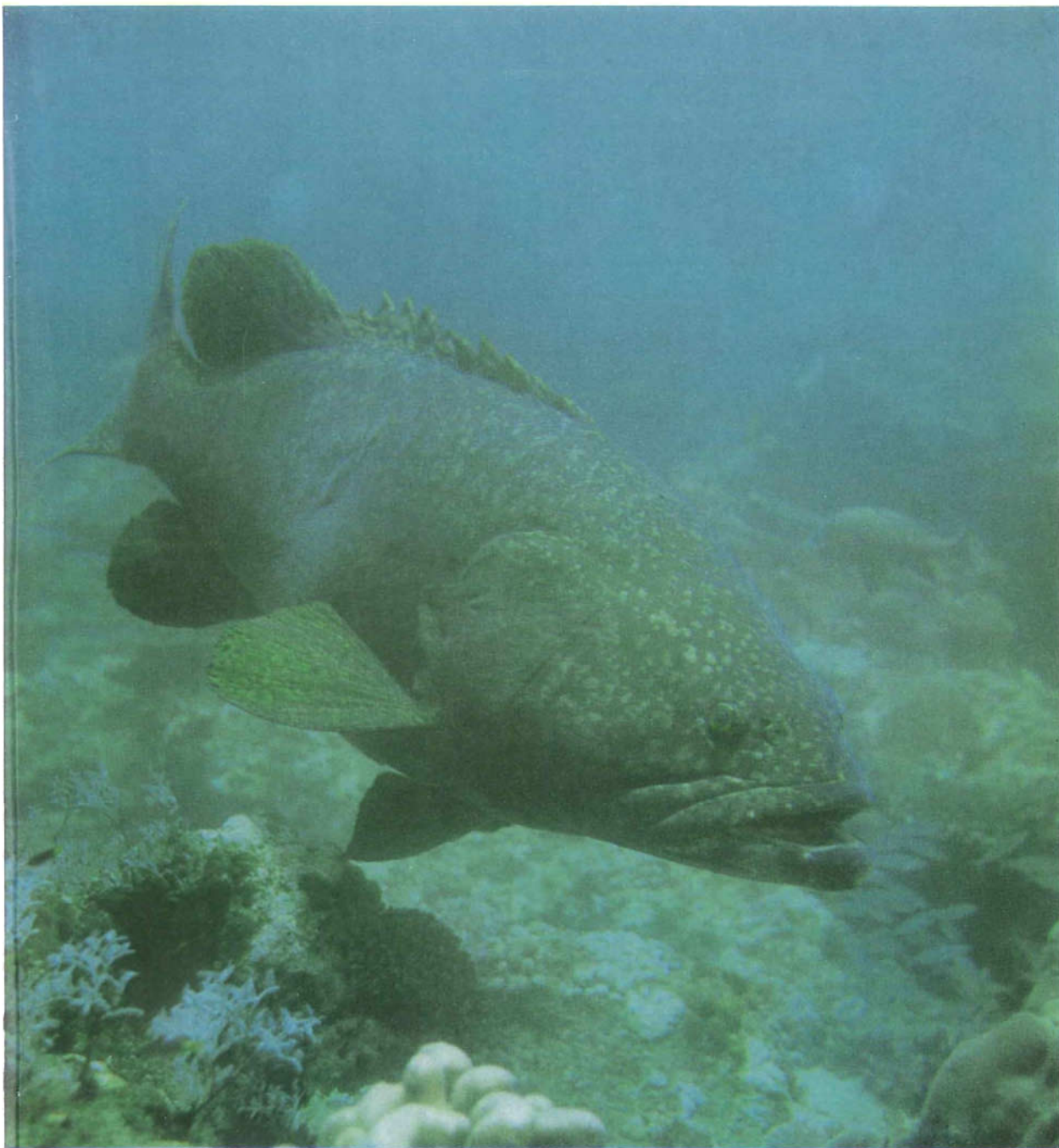
VALUE OF OVERSEAS EXPORTS OF PRINCIPAL COMMODITIES
MAIN COUNTRIES OF DESTINATION (a): 1971-72
(\$'000)

Division	Description and destination	Value	Division	Description and destination	Value
04	Food—		01	Meat, fresh, chilled or frozen— <i>continued</i>	
	Cereals and cereal preparations—			Mutton and lamb— <i>continued</i>	
	Barley, unmilled—			Qatar	291
	Taiwan	5,907		Bahrain	288
	Japan	5,706		Jordan	252
	Korea, Republic of	5,435		Other (b)—	
	Germany, Federal Republic of	4,242		United Kingdom	1,160
	Union of Soviet Socialist Republics	3,043		Japan	1,057
	United Kingdom	2,905		Singapore	278
	Italy	1,811	28	Ores, metalliferous—	
	Ireland	1,090		Ilmenite and leucocene—	
	Iran	1,086		United Kingdom	2,477
	Norway	903		France	1,679
	Romania	782		United States of America	1,460
	United States of America	349		Japan	907
	Vietnam, Republic of	277		Iron—	
	Flour of wheat—			Japan	282,226
	Mauritius	628		Germany, Federal Republic of	11,615
	Oats, unmilled—			Italy	10,828
	Japan	1,832		United States of America	6,286
	Italy	904		Belgium-Luxembourg	5,929
	Germany, Federal Republic of	492		United Kingdom	5,014
	Netherlands	424		France	4,061
	Wheat, unmilled—			Greece	2,144
	Japan	31,625		Spain	1,732
	Union of Arab Emirates	19,878		Netherlands	1,626
	United Kingdom	12,789		Manganese—	
	Iran	10,711		Japan	2,005
	Malaysia	7,956		Tin—	
	Union of Soviet Socialist Republics	5,913		Malaysia	1,028
	Indonesia	4,488		Spain	587
	Chile	4,282	33	Petroleum and petroleum products—	
	Taiwan	4,070		United Kingdom	4,005
	Peru	3,586		New Zealand	2,330
	Korea, Republic of	3,502		Fiji	1,231
	Zambia	3,358		Japan	993
	India	2,821		Malaysia	834
	Korea (North)	2,421		Christmas Island (Indian Ocean)	733
	Hong Kong	2,376		Germany, Federal Republic of	546
	Singapore	2,341		Italy	519
	Tanzania	1,559		South Africa	498
	Colombia	989		New Caledonia	276
	Sudan	783	21	Skins and hides—	
	Kenya	768		Sheep and lamb—	
	Malta	498		France	2,409
	Yemen, People's Republic of	364	24	Timber—	
03	Fish, fresh, chilled or frozen—			United Kingdom	2,441
	Rock lobster tails—			Algeria	349
	United States of America	24,474	26	Wool—	
05	Fruit, fresh—			Degreased (washed, scoured, etc.)—	
	Apples—			Union of Soviet Socialist Republics	4,870
	United Kingdom	2,309		United Kingdom	1,833
	Singapore	852		Italy	1,271
	United States of America	267		Germany, Federal Republic of	911
01	Meat, fresh, chilled or frozen—			France	408
	Beef and veal—			India	299
	United States of America	14,721		Greasy (including slip)—	
	United Kingdom	2,370		Japan	48,984
	Japan	1,701		Germany, Federal Republic of	15,973
	Singapore	1,379		France	7,570
	Union of Soviet Socialist Republics	500		Union of Soviet Socialist Republics	5,444
	Malta	339		Italy	5,028
	Malaysia	306		United Kingdom	3,703
	Mutton and lamb—			India	3,206
	Japan	3,158		Netherlands	3,090
	United Kingdom	2,343		Belgium-Luxembourg	2,616
	Greece	2,076		Poland	1,968
	Canada	1,670		Turkey	1,768
	Kuwait	1,247		United States of America	1,249
	Romania	1,119		Taiwan	1,035
	Singapore	1,065		Spain	713
	United States of America	937		Arab Republic of Egypt	493
	Union of Arab Emirates	652		Czechoslovakia	478
	Union of Soviet Socialist Republics	468		Yugoslavia	366
	Mauritius	402		Germany (East)	271
	Malaysia	368		Sri Lanka	263

(a) See page 411 for total values of overseas exports of the several commodities shown.
offals, poultry, poultry livers, rabbits, and goat and kangaroo meat.

(b) Comprises pigmeat, edible





Block by courtesy of 'Australian Fisheries'

PLATE 14—NORTH-WEST GROPER

Pictured is a North-west Groper (*Epinephelus tauvina*) photographed forty feet down off Kendrew Island near Dampier in the north-west of the State. This species, one of the largest known fish in Australian waters, attains a length of more than seven feet and can weigh more than 660 lb but is not caught commercially. Groperes have a reputation of being dangerous to man but this has not been positively proved. Nevertheless, divers give them a wide berth.



Block by courtesy of 'Australian Fisheries'

PLATE 15—SALMON FISHING AT EAGLE BAY

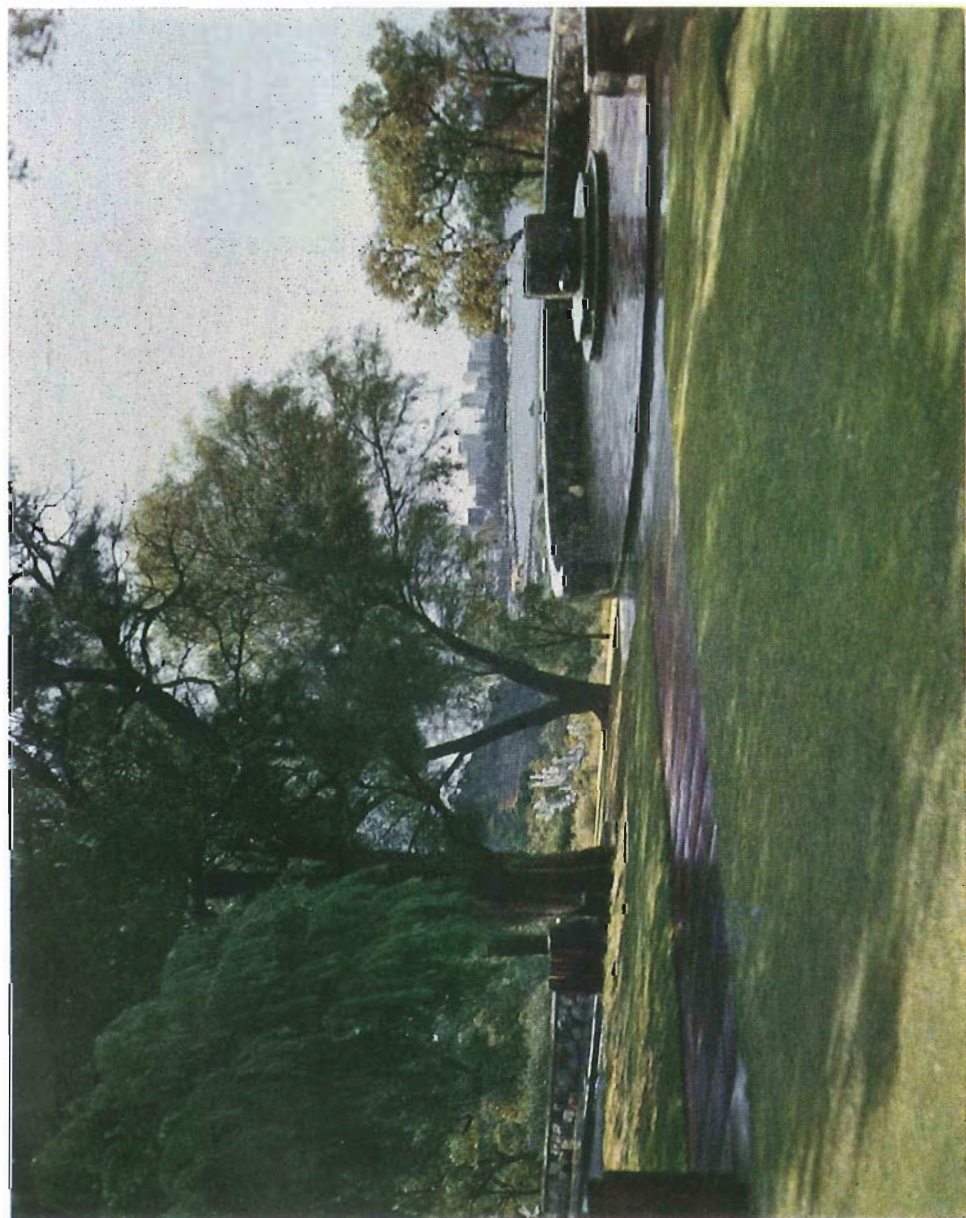
Beach seining Australian salmon (*Arripis trutta*) at Eagle Bay, Cape Naturaliste in the south-west of the State. The tractor is used to haul the net ashore and to carry fish to a mobile cleaning bench where they are headed, gutted and washed before being taken to the cannery. Heads are sold for rock lobster bait. The catch of salmon has declined from a peak in recent years of 10·5 million lb in 1967-68 to 3·6 million lb in 1970-71. In 1971-72 it was 3·9 million lb.



PLATE 16—GREY TEAL
(*Anas gibberifrons*)

Block by courtesy of BP

The tree-nesting ducks are perhaps the most difficult of all Western Australian birds to photograph, although this particular nest was in a hollow, semi-exposed branch only ten feet from the ground. Despite the ideal position of the nest, many weeks were spent by the photographer in obtaining a series of pictures. A very intriguing aspect of the tree-nesting ducks is the problem of how the chicks get to the ground once the eggs hatch. Some observers say the chicks jump, others that the parents carry them to the ground. One nest found was almost sixty feet from the ground, so if the chicks jumped it certainly would be hazardous. However, no dead ducklings were seen below the hollow.



Block by courtesy of Department of Lands and Surveys and the King's Park Board

PLATE 17—ROE MEMORIAL IN KING'S PARK

The memorial to John Septimus Roe, Surveyor-General of Western Australia from 1829 to 1870, was erected in what was then bushland by the Western Australian Historical Society in 1956. The Botanic Garden has been extended to adjoin it and the vicinity re-landscaped. A granite stone wall has been built along the front of the adjacent car park in keeping with that surrounding the Memorial. Surmounting the central hexagonal stone column of the Memorial is a brass plate bearing a map of Perth and the inscription 'John Septimus Roe, First Surveyor-General of W.A. prepared this plan for Perth in 1838'.

AVERAGE EXPORT VALUES

The following table shows the annual average export values, during the five years ended 30 June 1972, of a number of Western Australia's principal export commodities. The figures are based on *total* exports (interstate and overseas) and represent the value f.o.b., or its equivalent, at the point of final shipment.

ANNUAL AVERAGE EXPORT VALUES OF SPECIFIED COMMODITIES (\$)

Description	Unit	1967-68	1968-69	1969-70	1970-71	1971-72
Apples, fresh	bushe	3.37	3.39	3.75	3.39	3.52
Cereals and cereal preparations—						
Barley	"	1.05	0.97	0.81	1.05	0.91
Oats	"	0.82	0.71	0.63	0.78	0.66
Wheat	"	1.40	1.40	1.30	1.33	1.35
Wheaten flour	cental (a)	3.19	3.14	3.28	3.33	3.23
Meat, fresh, chilled or frozen—						
Beef	lb	0.35	0.38	0.41	0.40	0.42
Lamb	"	0.24	0.17	0.20	0.19	0.19
Mutton	"	0.16	0.15	0.17	0.17	0.19
Pork	"	0.39	0.40	0.37	0.36	0.36
Ores, metalliferous—						
Iminite	ton	10.20	10.50	10.75	11.97	14.47
Iron (b)	"	8.33	8.55	7.90	7.57	7.32
Manganese	"	21.15	20.58	19.56	17.64	15.74
Potatoes	cwt	2.41	2.66	2.12	2.76	2.19
Rock lobster tails	lb	2.08	2.56	2.39	2.79	3.26
Skins and hides—						
Bovine	"	0.13	0.15	0.15	0.13	0.14
Sheep and lamb, with wool	"	0.21	0.23	0.23	0.17	0.14
Timber—						
Railway sleepers	100 sup. ft	13.73	13.42	14.79	16.07	16.34
Other (c)	"	13.80	13.66	13.42	*13.19	13.90
Wool—						
Greasy (including slip)	kg	1.01	1.08	0.98	0.75	0.75
Degreased (washed, scoured, etc.)	"	1.09	1.29	1.36	0.92	0.83

(a) Cental = 100 lb. (b) The averages shown relate to overseas exports only. (c) Excluding plywood and veneers.
* Revised.

SHIPS' STORES

The following table shows the quantity and value of ships' stores loaded on board vessels at Western Australian ports during the years 1969-70 to 1971-72. The value of ships' stores is excluded from all tables appearing elsewhere in this Part.

EXPORTS IN THE FORM OF SHIPS' STORES (a)

Description	Unit	1969-70		1970-71		1971-72	
		Quantity	Value	Quantity	Value	Quantity	Value
Beverages, alcoholic	'000 gallons	200	\$'000 215	210	\$'000 236	200	\$'000 252
Foodstuffs—							
Fresh, chilled or frozen—							
Eggs in shell	'000 dozen	182	116	195	127	161	106
Fish	'000 lb	262	180	230	189	181	145
Fruit	"	...	97	...	118	...	115
Meat	'000 lb	1,937	716	1,905	780	1,809	741
Vegetables	"	...	237	...	267	...	225
All other foodstuffs	"	...	315	...	394	...	509
Fuel for ships and aircraft—							
Coal	ton	39	2	76	3	...	...
Other (bunker oil, etc.)	'000 gallons	143,687	11,098	163,624	16,128	184,807	17,548
Lubricants	"	...	787	...	490	...	575
All other ships' stores	"	...	1,329	...	1,830	...	2,262
Total (a)	n.a.	n.a.	15,092	n.a.	20,561	n.a.	22,477

n.a. denotes 'not applicable'.

(a) Includes interstate ships' stores valued at \$1,231,980 in 1969-70, \$1,895,626 in 1970-71 and \$1,250,360 in 1971-72. Where the value of overseas ships' stores recorded in any one entry is less than \$250, the stores concerned are not allocated according to commodity, but are included in the item *All other ships' stores*.

OVERSEAS IMPORTS AND EXPORTS

The following table shows the total value of Australia's overseas imports and exports, together with the proportion handled at Western Australian ports, during each of the years 1962-63 to 1971-72.

OVERSEAS TRADE OF AUSTRALIA—TOTAL VALUE AND PROPORTION HANDLED AT WESTERN AUSTRALIAN PORTS
(Figures revised since previous issue)

Year	Value of Australian trade (\$'000)			Proportion handled at Western Australian ports (per cent)		
	Imports	Exports	Total	Imports	Exports	Total
1962-63	2,162,669	2,151,811	4,314,480	5.21	11.50	8.35
1963-64	2,372,658	2,782,460	5,155,118	5.13	10.30	7.92
1964-65	2,904,703	2,651,449	5,556,152	5.29	9.17	7.14
1965-66	2,939,492	2,720,953	5,660,445	5.98	11.55	8.66
1966-67	3,045,341	3,024,158	6,069,499	5.23	13.93	9.57
1967-68	3,264,473	3,044,675	6,309,148	6.34	15.61	10.81
1968-69	3,468,505	3,374,263	6,842,768	5.87	16.19	10.96
1969-70	3,881,227	4,137,222	8,018,449	6.24	16.32	11.44
1970-71	4,150,028	4,375,757	8,525,785	6.71	19.71	13.38
1971-72	4,008,365	4,896,381	8,904,746	7.07	19.33	13.81

CUSTOMS AND EXCISE

The Customs Tariff

The first Commonwealth Customs Tariff was introduced on 8 October 1901, from which date uniform duties came into effect throughout Australia. The Australian Customs Tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries and of granting preferential treatment to imports from certain countries. Duties are imposed on some goods, generally of a luxury nature, for revenue purposes. Customs collections are a major source of revenue, but in its protective character the tariff has an important influence on the Australian economy.

The particulars appearing in the tables in this section have been extracted from the bulletin *Overseas Trade* published annually by the Commonwealth Statistician, Canberra. The bulletin contains details showing, for each State and Territory, a dissection of customs revenue according to Customs Tariff Division, and excise revenue according to Excise Tariff Item and rate of duty.

CUSTOMS AND EXCISE—GROSS COLLECTIONS IN WESTERN AUSTRALIA (a)
(\$'000)

Tariff	1967-68	1968-69	1969-70	1970-71	1971-72
Customs duty (a)	19,468	21,202	24,649	32,262	30,072
Excise duty—					
Petroleum products	22,105	24,656	26,743	34,372	41,997
Spirits, potable	1,051	1,163	1,252	1,300	1,473
Tobacco, cigars, cigarettes, etc.	13,960	15,250	17,258	20,536	22,939
Other (b)	25,787	28,220	31,384	32,770	35,473
Total, excise (a) (b)	62,903	69,289	76,637	88,978	101,883
GRAND TOTAL (b)	82,371	90,490	101,286	121,240	131,955

(a) For net collections see page 267.
available for publication.

(b) Includes excise on beer, playing cards and matches, details of which are not

The following table shows the rates of excise duty applying to certain commodities during the year 1971-72, the quantities of goods excised in Western Australia and Australia at those rates, and the gross amounts of revenue collected. For a more detailed analysis, including particulars for each State and Territory, the reader is referred to the annual bulletin *Overseas Trade* to which reference is made earlier in this section.

The figures shown in the table refer to amounts *collected* in Western Australia. It is important to note that excise duty levied on a particular commodity may have been paid in a State other than that in which it is consumed. For this reason the amounts shown for Western Australia do not necessarily represent the duty paid in respect of Western Australian consumption.

**EXCISE DUTY—GROSS COLLECTIONS CLASSIFIED ACCORDING TO COMMODITY
WESTERN AUSTRALIA AND AUSTRALIA: 1971-72**

Commodity	Unit of quantity	Rate of duty per unit of quantity	Western Australia		Australia	
			Quantity	Gross collections	Quantity	Gross collections
		\$	'000 units	\$'000	'000 units	\$'000
Alcoholic beverages—						
Beer	gal	1-1375	(a)	(a)	350,618	398,829
Spirits (potable)—	pf gal					
Brandy	"	8-00	96	766	1,250	9,998
Gin	"	11-30	13	147	260	2,931
Whisky	"	11-10	17	184	383	4,245
Rum	"	11-30	8	89	525	5,932
	"	11-40	....	....	7	85
Liqueurs	"	11-20	5	60	114	1,272
	"	12-20	(b)	(b)	1	12
Vodka	"	11-20	14	155	178	1,989
Flavoured spirituous liquors	"	11-20	6	72	67	751
Other	"	12-20	(b)	(b)	(b)	5
Grape wine for commercial purposes	gal	(c) 0-50	1,235	618	22,154	11,077
		(d) 0-25	86	22	1,826	457
Tobacco, cigars, cigarettes, etc.—						
Tobacco, manufactured	lb	0-69	9	6	16	11
	"	(e) 2-373	....	....	6	13
	"	(f) 2-623	....	....	22	57
	"	(e) 2-44	139	340	1,839	4,486
	"	(f) 2-69	366	985	4,631	12,458
Cigars, machine-made	"	(e) 3-85	3	13	98	378
	"	(f) 4-35	6	28	110	478
Cigarettes, machine-made	"	(e) 4-70	1,180	5,544	16,505	77,573
	"	(f) 5-20	3,065	15,938	40,960	212,999
Cigarette papers and tubes	60 papers or tubes	0-0145	5,821	84	62,628	908
Petroleum products—						
Gasoline—						
Aviation	gal	(e) 0-1257	16	2	2,624	330
	"	(f) 0-1457	93	14	9,783	1,425
	"	(e) 0-153	....	....	416	64
	"	(f) 0-173	....	....	28	5
Other	"	(e) 0-153	39,636	6,064	432,473	66,168
	"	(f) 0-173	169,418	29,309	1,971,943	341,145
Aviation turbine kerosene	"	(e) 0-109	2,209	241	24,401	2,660
	"	(f) 0-129	15,029	1,939	141,312	18,230
Diesel fuel	"	(e) 0-155	6,447	999	51,244	7,943
	"	(f) 0-175	19,594	3,429	173,890	30,429
Playing cards	doz packs	1-00	(a)	(a)	149	149
Matches	60 gross	0-65	(a)	(a)	3,876	2,520
Coal—						
Home consumption	ton	0-044	1,161	51	21,114	929
Export	"	0-033	3	(b)	2,453	81
	"	0-44	....	....	17,443	767
Canned fruit	dozen containers	0-0125	....	....	137	2
	"	0-025	....	....	2,345	59
	"	0-05	13	1	4,349	217
	"	0-175	....	....	145	25
Other	n.a.	n.a.	n.a.	(g) 34,783	n.a.	3,170
Total, Gross collections	n.a.	n.a.	n.a.	101,883	n.a.	1,223,263

n.a. denotes 'not applicable'.

(a) Not available for publication. (b) Less than 500. (c) Operative to 25 May 1972. (d) Operative from 25 May 1972. (e) Operative to 18 August 1971. (f) Operative from 18 August 1971. (g) Includes excise duty paid on beer, playing cards and matches; see footnote (a).

Chapter IX—continued

Part 2—Internal Trade

CENSUSES OF WHOLESALE, RETAIL AND SELECTED SERVICE ESTABLISHMENTS

CENSUS OF RETAIL ESTABLISHMENTS

Details of the structure and pattern of retail trade throughout Australia have been obtained in periodic Censuses of Retail Establishments. For each of the years 1947-48, 1948-49, 1952-53, 1956-57 and 1961-62 a census was conducted which covered the retail trading activities of all establishments selling to the general public from fixed premises such as shops, rooms, kiosks and yards. In addition, these censuses included some details of the activities of service establishments (e.g. motor repair workshops, hairdressers, boot repairers, cafes and restaurants) and supplementary collections were conducted relating to the activities of licensed clubs, motion picture theatres, laundries and dry cleaners. Data from these censuses were published by the Commonwealth Statistician, Canberra, in a series of special bulletins for each State and Territory and for Australia as a whole. The Census of Retail Establishments provides a framework for the quarterly sample surveys designed to measure variations in the value of retail sales throughout the intercensal period—see pages 427-8.

INTEGRATED ECONOMIC CENSUSES

In 1968-69 the first Integrated Economic Censuses were conducted covering mining, manufacturing, electricity and gas, wholesale, retail and selected service industries.

Data from two of the Integrated Economic Censuses, namely the *Census of Retail and Selected Service Establishments, 1968-69* and the *Census of Wholesale Establishments, 1968-69* are presented in this Part. Classification of establishments to the industries included in these censuses was based on principles set out in the Bureau publication *Australian Standard Industrial Classification (Preliminary Edition), 1969, Vol. 1*, referred to hereafter as ASIC. In general, an establishment was defined as a single physical location of an enterprise and was classified to an industry according to the predominant activity engaged in at that location. This was a departure from the practice of past Retail Censuses whereby a location was regarded as a retail establishment provided it made retail sales exceeding \$1,000 for the census year (i.e. regardless of predominant activity). In addition, data relating to establishments in the Integrated Economic Censuses covered all the activities of the establishment whereas, in previous Retail Censuses, only the retail activities of each establishment were recorded. Thus, for example, employment in retail establishments in the 1968-69 census included employees engaged in non-retail activities carried out in retail establishments (e.g. wholesaling or manufacturing).

A further refinement introduced in the Integrated Censuses was the concept of administrative offices and ancillary units. This concept recognised the existence of separately-located units within business enterprises which were engaged mainly in providing a service (e.g. administration, transport, storage, etc.) to establishments within the enterprise. It was considered that the data for these units should be recorded with the industry of the establishments receiving the service rather than with the industry represented by the service rendered. Data for industries included in the Integrated Economic Censuses thus included components relating to administrative offices and ancillary units serving the establishments in the industry.

Definitions of the items given in the tables on pages 422-3 and 425-6 are as follows.

NUMBER OF ESTABLISHMENTS. These relate to establishments as such and do not include the numbers of separately-located administrative offices and ancillary units.

PERSONS EMPLOYED. Working proprietors at the end of June 1969 and employees on the pay-roll of the last pay-period in June 1969, including those working at separately-located administrative offices and ancillary units in the State. For retail and selected service establishments, unpaid members of the proprietor's family and other unpaid helpers working at least fifteen hours during the last week of June 1969 are also included.

SALARIES AND WAGES. The salaries and wages of all employees of the establishment, including those working at separately-located administrative offices and ancillary units in the State. Amounts drawn by working proprietors are not included.

TURNOVER. Sales of goods (retail and wholesale) owned by the enterprise, commissions received on sales or purchases of goods owned by other enterprises, and all other operating revenue from outside the enterprise such as repair and service revenue, rent and leasing revenue from retail or wholesale activities (as defined in ASIC), and takings from meals and accommodation, theatre admissions, hairdressing, laundry and dry cleaning. Transfers out from one establishment of an enterprise to another are included at commercial values for wholesale establishments but are excluded for retail and selected service establishments and recorded instead as purchases of the receiving establishments. Also included are goods withdrawn from stock for own use as fixed tangible assets or for rental or lease. Rent and leasing revenue from other than wholesale or retail activities, interest and receipts from sales of fixed tangible assets are excluded.

STOCKS. All stocks of goods for sale, materials, fuels and work-in-progress owned by the enterprise and controlled by the establishment, whether located at the establishment or elsewhere.

PURCHASES, TRANSFERS IN AND SELECTED EXPENSES. Purchases of goods for resale and materials for manufacturing, plus transfers in from other establishments of the enterprise other than retail establishments, charges for commission and sub-contract work, purchases of wrapping and packaging materials, electricity and fuel, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments.

VALUE ADDED. Sales, transfers out and other operating revenue plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

RETAIL SALES. Sales to the final consumer of new or used goods of a type used mainly for household and personal purposes. Sales by retailers of commodities such as basic building materials, builders' hardware and builders' supplies, timber, commercial refrigerators and freezers, agricultural tractors, farm machinery and implements, construction and earthmoving equipment, grain, feed, fertilisers and agricultural supplies, and business machines and equipment, are treated as wholesale sales.

WHOLESALE SALES. Resale of new and used goods to retailers, other wholesalers, institutional, professional or other business users. Includes sales on own account, transfers out, and sales or purchases on commission of goods owned by other enterprises and arranged by wholesale establishments or their agents, whether from stocks held on consignment or by direct delivery to customers from stocks held by other enterprises.

CENSUS OF RETAIL AND SELECTED SERVICE ESTABLISHMENTS, 1968-69

Retail establishments included in this census were defined by the ASIC as establishments engaged mainly in the resale of new or used goods to final consumers for household or personal consumption, or in various other activities such as custom tailoring and dress-making, clothing repair and alteration, making-up, installation and repair of blinds, awnings and curtains, shoe repairs, repair of household appliances, watch, clock and jewellery repairs, panel beating, motor vehicle repairs and tyre retreading. The selected service establishments included in the census were motion picture theatres, cafes and restaurants, licensed hotels, motels and wine saloons, licensed clubs, laundries and dry cleaners, and hairdressers and beauty salons.

The following table shows final figures by industry class for the major variables collected in the Census of Retail and Selected Service Establishments, 1968-69. Direct comparisons with figures from previous retail censuses and from retail surveys are not possible due to changes in units, scope and items of data.

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
RETAIL ESTABLISHMENTS—								
Department, variety and general stores—								
Department stores	20	5,853	11.4	82.4	11.5	60.5	21.0	74.7
Variety and general stores	262	3,890	6.0	56.1	7.7	43.7	12.9	49.1
Total	282	9,743	17.4	138.5	19.2	104.2	34.0	123.7
Food stores—								
Supermarkets	55	1,330	2.3	45.2	2.6	39.1	6.3	44.5
Grocers and tobacconists	1,439	5,657	5.8	116.7	8.3	101.5	16.5	113.7
Butchers	707	2,621	4.2	42.4	0.4	31.7	10.8	41.3
Fruit and vegetable stores	260	1,243	1.1	14.8	0.3	11.7	3.2	14.6
Liquor stores	80	334	0.4	11.0	0.7	9.3	1.8	10.6
Confectionery and soft drink stores	490	1,730	1.0	13.1	0.5	9.8	3.4	12.0
Fish, chip and hamburger shops	246	869	0.5	6.8	0.1	4.7	2.1	6.5
Bread and cake shops	111	560	0.7	3.8	0.1	2.4	1.5	3.7
Total	3,388	14,344	16.1	253.8	13.1	210.2	45.5	246.9
Bread and milk vendors—								
Bread vendors	7	68	0.2	0.9	(d)	0.7	0.2	0.5
Milk vendors	298	773	0.2	11.3	(d)	9.4	1.9	11.1
Total	305	841	0.4	12.3	(d)	10.1	2.2	11.6
Clothing, fabrics and furniture stores—								
Furniture and floor covering stores	144	855	2.0	21.8	3.1	16.8	5.3	21.3
Fabrics and household textile stores	122	477	0.6	5.8	1.5	4.3	1.7	5.7
Men's and boys' wear stores	225	1,124	1.7	16.7	3.8	11.9	4.9	16.5
Women's, girls' and infants' wear stores	488	2,192	2.8	27.0	5.5	20.2	7.5	26.9
Footwear stores	109	965	1.4	12.9	3.3	9.4	3.6	11.9
Shoe repairers	79	138	0.1	0.7	(d)	0.2	0.5	0.1
Total	1,167	5,751	8.7	84.8	17.3	62.9	23.6	82.5
Household appliance and hardware stores—								
Household appliance stores	221	1,333	3.3	38.2	4.7	29.8	9.1	34.1
Household electric appliance repairers	88	556	1.2	4.0	0.3	1.7	2.3	0.5
China, glassware and domestic hardware stores	78	263	0.3	3.7	0.8	2.8	1.0	3.0
Watchmakers and jewellers	151	593	0.9	6.9	2.1	4.5	2.7	5.9
Musical instrument and record stores	47	128	0.1	1.6	0.3	1.1	0.6	1.4
Total	585	2,873	5.8	54.3	8.2	39.8	15.6	44.9
Motor vehicle dealers, petrol and tyre retailers—								
New motor vehicle dealers and motor vehicle repairers n.e.c.	607	6,515	15.1	232.7	19.7	189.8	43.8	161.0
Used motor vehicle and parts dealers	197	1,033	2.9	55.4	5.5	47.0	9.1	53.1
Tyre and battery retailers and tyre refitters	134	988	2.6	22.5	2.9	16.7	6.0	16.7
Service stations	803	3,633	4.7	60.9	2.1	47.9	13.3	50.6
Smash repair workshops	333	1,740	2.9	12.0	0.3	5.6	6.5	0.3
Motor cycle dealers	28	140	0.2	2.4	0.5	1.8	0.7	1.7
Boat and caravan dealers	55	284	0.6	10.6	1.5	9.1	1.9	9.2
Total	2,157	14,333	29.0	396.5	32.6	317.8	81.2	292.5
Other retailers—								
Pharmacies	391	1,808	2.6	24.4	4.0	16.4	8.4	24.0
Photographic equipment stores	27	105	0.1	1.6	0.3	1.2	0.5	1.5
Sporting goods, bicycle and toy shops	124	361	0.3	4.3	1.0	3.1	1.3	3.8
Newsagents, stationers and book-sellers	376	1,530	1.2	18.1	2.6	14.0	4.5	17.4
Antique and second hand goods dealers	127	287	0.1	1.8	0.4	1.1	0.8	1.7
Nurserymen and florists	78	258	0.2	1.3	0.1	0.8	0.5	1.2
Retailers n.e.c.	169	468	0.4	3.2	0.4	1.9	1.4	2.6
Total	1,292	4,817	5.0	54.7	8.8	38.6	17.4	52.3
Total, Retail establishments	9,176	52,702	82.4	995.0	99.2	783.6	219.4	854.4

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)
—continued

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
SELECTED SERVICE ESTABLISHMENTS—								
Motion picture theatres	125	954	1.3	6.1	(d)	2.3	3.7	0.8
Restaurants and licensed hotels—								
Cafes and restaurants	301	2,959	3.2	14.6	0.3	7.7	7.0	2.7
Licensed hotels, motels, wine saloons	502	7,178	13.5	84.2	2.9	51.5	33.1	70.5
Total	803	10,137	16.7	98.8	3.1	59.2	40.1	73.2
Licensed clubs—								
Licensed bowling clubs	91	333	0.8	3.7	0.1	2.2	1.5	3.2
Licensed golf clubs	50	265	0.5	1.9	0.1	0.9	1.1	1.1
Licensed clubs n.e.c.	111	729	1.5	7.6	0.3	4.5	3.1	6.2
Total	252	1,327	2.7	13.2	0.5	7.5	5.7	10.5
Laundries and dry cleaners	144	1,383	2.0	5.3	0.1	1.3	4.0	(d)
Hairdressing and beauty salons—								
Men's hairdressing	234	474	0.3	1.6	0.1	0.4	1.2	0.4
Women's hairdressing and beauty salons	443	1,972	1.9	4.7	0.1	0.9	3.8	0.1
Total	677	2,446	2.2	6.3	0.2	1.3	5.1	0.5
Total, Selected service establishments	2,001	16,247	25.0	129.7	3.9	71.6	58.6	85.0
Total, Retail and selected service establishments	11,177	68,949	107.3	1,124.7	103.2	855.3	278.0	939.4

n.e.c. denotes 'not elsewhere classified'.

(a) See letterpress immediately preceding table. (b) At end of June 1969; includes working proprietors and unpaid helpers working at least 15 hours during the week. (c) Excludes amounts drawn by working proprietors. (d) Less than \$50,000.

A summary of operations giving final census figures by industry group for Australia appears in the next table.

RETAIL ESTABLISHMENTS AND SELECTED SERVICE ESTABLISHMENTS
SUMMARY OF OPERATIONS: AUSTRALIA, 1968-69 (a)

Industry group	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Retail sales
			\$m	\$m	\$m	\$m	\$m	\$m
Retail establishments—								
Department, variety and general stores	2,715	111,748	227.2	1,625.2	249.6	1,212.0	429.9	1,514.9
Food stores	51,938	211,901	245.1	3,274.8	175.4	2,642.5	648.7	3,216.5
Bread and milk vendors	5,459	14,888	11.5	208.4	0.3	164.6	43.8	199.9
Clothing, fabrics and furniture stores	18,751	78,706	125.7	1,126.8	241.4	814.8	328.0	1,097.7
Household appliance and hardware stores	8,524	42,117	87.2	664.9	119.2	463.1	208.5	538.4
Motor vehicle dealers, petrol and tyre retailers	25,540	168,834	356.5	4,256.6	362.0	3,395.2	898.0	3,148.9
Other retailers	17,003	73,238	99.7	878.4	139.7	602.7	287.6	838.6
Total, Retail establishments	129,930	701,432	1,152.9	12,035.1	1,287.7	9,295.0	2,844.5	10,555.0
Selected service establishments—								
Motion picture theatres	957	9,048	13.3	54.4	0.3	21.2	33.2	5.2
Restaurants and licensed hotels	10,621	124,728	203.7	1,213.0	36.5	732.6	484.6	884.4
Licensed clubs	2,761	37,869	81.6	348.7	8.5	141.8	207.7	168.5
Laundries and dry cleaners	2,160	20,105	35.3	89.7	1.3	22.7	67.1	0.6
Hairdressing and beauty salons	9,842	28,875	28.3	86.6	2.8	17.9	69.0	7.0
Total, Selected service establishments	26,341	220,625	362.2	1,792.5	49.3	936.2	861.7	1,065.8
GRAND TOTAL	156,271	922,057	1,515.1	13,827.6	1,337.0	10,231.2	3,706.2	11,620.8

(a) See letterpress immediately preceding the previous table. and unpaid helpers working at least 15 hours during the week.

(b) At end of June 1969; includes working proprietors (c) Excludes amounts drawn by working proprietors.

Commodity Statistics

Details of retail (and wholesale) sales of groups of commodities were collected in the 1968-69 Integrated Economic Censuses. It will be noted, however, that the commodity groupings in the retail and wholesale censuses are, in most cases, not identical, and direct comparison is not possible. In addition, the retail and wholesale sales tables differ in scope in that the retail sales figures include sales by mining, manufacturing, and electricity and gas establishments, whereas the wholesale sales tables exclude them.

Retail sales were defined as the sale to final consumers of new or used goods of a type used mainly for household and personal purposes. Sales by retailers of commodities such as basic building materials, builders' hardware and builders' supplies, timber, commercial refrigerators and freezers, agricultural tractors, farm machinery and implements, construction and earthmoving equipment, grain, feed, fertilisers and agricultural supplies, and business machines and equipment, were treated as wholesale sales since the goods are of a type used mainly for commercial purposes.

The table below shows retail sales made by retail and selected service establishments, wholesale, mining, manufacturing, and electricity and gas establishments which were in operation at 30 June 1969. Details of retail sales obtained from the Integrated Economic Censuses differ from those recorded in the quarterly Survey of Retail Establishments (see letterpress on pages 427-8 and from previous censuses due to variations in scope and definition. Direct comparisons with figures from previous censuses and from retail surveys are therefore not possible.

INTEGRATED ECONOMIC CENSUSES, 1968-69—RETAIL SALES (a)
NUMBER OF ESTABLISHMENTS AND VALUE OF RETAIL SALES BY COMMODITY ITEM

Commodity item	Number of establishments at 30 June 1969 (a)	Value of retail sales (a)	Commodity item	Number of establishments at 30 June 1969 (a)	Value of retail sales (a)
		\$'000			\$'000
Groceries, other food items, etc.—		122,188	Hardware (b)—		
Groceries	2,381	122,188	Domestic hardware, china, glassware (including garden equipment)	1,141	16,340
Fresh meat	1,094	45,992	Petrol, motor vehicles, boats, etc. (c)—		
Fresh fruit and vegetables	1,544	21,290	Petrol, oils and motor lubricants, etc.	1,602	50,541
Bread, cakes and pastries	1,932	11,373	New motor vehicles	311	118,700
Delivered bread	25	4,279	New parts and accessories for motor vehicles	1,183	15,957
Delivered milk	312	11,100	Used motor vehicles	381	81,576
Fish (fresh or cooked), chips, hamburgers, etc.	848	7,704	Used parts and accessories for motor vehicles	169	1,666
Confectionery, ice cream, soft drinks, wrapped lunches, etc.	3,851	28,735	New and used motor cycles, motor scooters	127	1,809
Beer, wine and spirits	1,018	87,706	New and used motor tyres, tubes and batteries	1,239	20,042
Cigarettes and other tobacco products	4,861	31,738	Boats, outboard motors, caravans	98	10,325
Furniture and floor coverings—			Miscellaneous—		
Furniture, mattresses, blinds, etc. including installation and repairs	442	23,129	Cosmetics, perfumes, toilet preparations, etc.	1,607	10,096
Floor coverings, carpets, lino, etc. including laying of floor coverings	265	10,503	Patent medicines and therapeutic appliances	1,193	8,991
Fabrics, clothing and footwear—			Prescription medicines	385	10,512
Fabrics, piece goods, manchester, blankets, soft furnishings, etc.	791	20,894	Photographic equipment and supplies	691	3,790
Clothing—			Watches, clocks, jewellery, silverware	668	7,521
Men's and boys'	855	29,854	Sporting goods, bicycles, toys, etc.	916	8,700
Women's, girls' and infants'	955	48,784	Books, stationery, newspapers, etc.	1,391	20,415
Footwear—			Antiques, disposal goods, secondhand goods (excluding goods traded in), etc.	183	2,090
Men's and boys'	607	6,072	Cut flowers, garden seeds, shrubs, etc.	280	1,855
Women's, girls' and infants'	562	10,594	Travel goods, brief cases, etc.	358	1,801
Household appliances—			Bottled liquefied petroleum gas	205	1,969
Radios, radiograms, tape recorders, etc.	436	6,016	Goods not included above	498	5,165
Musical instruments, records, etc.	338	3,850			
Television sets and accessories	284	6,665			
Domestic refrigerators and freezers	307	10,287			
Washing machines, stoves, household heating appliances, etc.	332	8,476			
Other household appliances	677	9,008			
			Total	(d)	966,098

(a) See letterpress immediately preceding table.

(b) Excludes basic building materials, builders' hardware and supplies

such as tools of trade, paint, etc. See letterpress *Commodity Statistics* preceding table. (c) Excludes tractors, farm machinery and implements, earthmoving equipment, etc. See letterpress *Commodity Statistics* preceding table. (d) Many establishments show takings in more than one commodity item. Accordingly, the sum of the number of establishments showing sales for individual items will exceed the total number of retail and selected service, wholesale, mining, manufacturing and electricity and gas establishments reporting retail sales.

CENSUS OF WHOLESALE ESTABLISHMENTS, 1968-69

This census covered all establishments defined by the ASIC as predominantly engaged in the resale (as agent or principal) of new or used goods to retailers or other wholesalers, or to institutional, professional or other business users (including farmers and builders). This definition included wholesale merchants, manufacturers' sales offices which held stocks, commission agents including import, export and purchasing agents, co-operatives and marketing boards. In addition, establishments engaged mainly in repairing farm machinery and business machines, or in leasing machinery and equipment for periods of one year or more without operators were classified to wholesaling.

The table below shows details for the major variables collected in the Census of Wholesale Establishments, 1968-69, classified by industry class.

WHOLESALE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Wholesale sales	
								On own account (including transfers out)	On commission (d)
General wholesalers	57	1,308	\$m 3.2	\$m 41.6	\$m 6.8	\$m 36.0	\$m 6.7	\$m 39.9	\$m 20.7
Woolselling brokers, stock and station agents and farm suppliers	297	3,904	11.1	113.7	8.7	89.4	24.6	91.3	248.5
Wool buyers and farm products wholesalers n.e.c.	121	751	2.3	127.7	9.2	119.6	9.0	125.2	85.4
Petroleum and petroleum products wholesalers	265	2,102	6.8	153.9	11.0	121.2	32.8	131.6	133.9
Minerals, metals and chemicals wholesalers—									
Iron and steel	26	406	1.4	32.7	5.4	29.2	4.7	32.3	7.8
Metal scrap	30	220	0.5	6.1	0.9	5.1	1.4	6.1	....
Metals and minerals n.e.c.	10	63	0.2	1.4	0.1	1.0	0.4	1.1	5.9
Chemicals and allied products n.e.c.	28	145	0.4	8.1	1.8	6.8	1.4	7.9	1.6
Total	94	834	2.5	48.2	8.2	42.0	8.0	47.4	15.3
Machinery and equipment wholesalers—									
Agricultural and construction machinery	295	3,018	8.0	110.8	26.9	91.6	21.3	99.7	11.9
Tyres and motor vehicle parts	85	1,623	3.9	35.4	10.3	27.0	10.5	32.3	5.5
Professional and scientific equipment	23	212	0.5	4.6	1.1	3.6	1.2	4.4	0.4
Business machines including computers	44	753	2.4	10.8	2.1	5.4	5.4	7.3	....
Electrical and electronic equipment n.e.c.	78	1,483	3.9	38.7	6.7	31.7	7.7	37.4	6.7
Industrial machinery and equipment n.e.c.	136	1,575	4.8	56.5	12.8	45.2	13.3	53.3	7.6
Total	661	8,664	23.5	256.8	59.8	204.4	59.4	234.5	32.2
Building materials and supplies wholesalers—									
Timber wholesalers	45	970	2.8	30.4	4.7	23.8	6.6	30.1	0.9
Builders hardware and materials n.e.c.	325	3,492	9.0	90.6	12.2	73.5	19.1	84.8	19.4
Total	370	4,462	11.8	121.1	16.9	97.4	25.8	114.9	20.3
Wholesalers of household appliances and hardware, furniture—									
Household appliances, radio and T.V.	50	909	2.7	35.0	4.6	27.6	8.0	32.2	12.5
China, glassware and domestic hardware	39	176	0.4	3.8	0.6	3.0	1.0	3.6	2.9
Furniture and floor coverings	41	232	0.6	8.2	1.2	6.7	1.5	7.6	9.9
Total	130	1,317	3.6	47.1	6.4	37.3	10.6	43.4	25.4

For footnotes, see end of table.

WHOLESALE ESTABLISHMENTS
DETAILS OF OPERATIONS BY INDUSTRY CLASS: WESTERN AUSTRALIA, 1968-69 (a)
—continued—

Industry class	Number of establishments operating at 30 June 1969	Persons employed (b)	Salaries and wages (c)	Turnover	Stocks at 30 June 1969	Purchases, transfers in and selected expenses	Value added	Wholesale sales	
								On own account (including transfers out)	On commission (d)
Clothing, footwear and textile wholesalers n.e.c.—			\$m	\$m	\$m	\$m	\$m	\$m	\$m
Men's and boys' clothing	41	230	0.5	7.0	0.6	5.5	1.4	6.4	11.0
Women's, girls' and infants' clothing....	48	306	0.6	8.9	1.6	7.3	1.6	8.3	11.5
Footwear	15	74	0.1	1.2	0.1	0.9	0.4	0.9	5.4
Textile and textile products n.e.c.	66	550	1.3	13.5	2.9	11.2	2.8	12.5	11.5
Total	170	1,160	2.5	30.6	5.2	24.8	6.2	28.0	39.4
Food, beverages and tobacco products wholesalers—									
Meat	39	337	0.8	48.9	3.6	45.9	4.0	48.4	6.1
Poultry, smallgoods and dairy products	38	214	0.6	14.2	0.5	12.9	1.4	13.7	5.0
Fruit and vegetables	90	1,080	2.7	38.9	0.9	33.5	5.2	36.1	17.6
Fish	39	880	2.0	49.9	4.1	45.6	5.4	48.6	0.5
Eggs	9								
Confectionery and soft drinks	25	262	0.7	9.3	0.9	8.1	1.5	9.2	1.3
Beer, wine and spirits	20	300	0.8	15.3	1.5	12.7	2.9	14.9	0.5
Cigarettes, cigars and tobacco products	6	267	0.9	13.9	1.1	12.5	1.8	13.1	8.3
Groceries and food n.e.c.	93	1,455	3.5	68.8	7.0	58.6	10.7	67.0	12.2
Total	359	4,795	11.9	259.3	19.6	229.7	33.0	251.0	51.5
Other wholesalers—									
Photographic equipment and supplies	16	156	0.4	4.5	0.6	3.0	1.6	4.2	0.6
Watches, clocks and jewellery	25	279	0.5	6.4	1.4	5.1	1.6	5.9	4.2
Toys and sporting goods	26								
Books, periodicals, paper, and paper products	72	771	1.9	19.9	3.7	16.3	3.9	18.4	6.0
Pharmaceutical and toilet preparations	86	847	2.1	25.6	3.0	20.5	5.4	24.8	6.6
Wholesalers n.e.c.	201	842	1.5	15.4	1.8	10.9	4.8	12.1	4.1
Total	426	2,895	6.5	71.8	10.6	55.7	17.3	65.4	21.5
Total wholesale trade	2,950	32,192	85.6	1,271.8	162.4	1,057.7	233.3	1,172.7	694.0

n.e.c. denotes 'not elsewhere classified'.

(a) See letterpress immediately preceding table. (b) At the end of June 1969; includes working proprietors. (c) Excludes amounts drawn by working proprietors. (d) Outlay on fixed tangible assets less disposals.

Commodity Statistics

Details of wholesale (and retail) sales of groups of commodities were collected in the 1968-69 Integrated Economic Censuses. It will be noted, however, that the commodity groupings in the retail and wholesale censuses are, in most cases, not identical, and direct comparison is not possible. In addition, the retail and wholesale sales tables differ in scope in that the retail sales figures include sales by mining, manufacturing, and electricity and gas establishments, whereas the wholesale sales tables exclude them.

Wholesale sales were defined as the resale of new and used goods to retailers or other wholesalers, or to institutional (including government), professional or other business users (including builders and farmers). The next table shows wholesale sales made by wholesale and retail and selected service establishments which operated during 1968-69. Data for wholesale sales are not free of duplication, in that they may include, for example, sales of the same goods from wholesaler to wholesaler and wholesaler to retailer, respectively. Wholesale sales on commission by agents are not included in the table.

Total wholesale sales on own account for Australia as a whole amounted to \$15,196.9 million.

INTEGRATED ECONOMIC CENSUSES, 1968-69
VALUE OF WHOLESALE SALES ON OWN ACCOUNT BY COMMODITY ITEM (a)
(\$'000)

Commodity item	Wholesale sales on own account (a)	Commodity item	Wholesale sales on own account (a)
Agricultural and pastoral products and supplies—		Vehicles and transport equipment—continued	
Livestock	2,631	Tyres and wet cell batteries	13,437
Wool	91,781	Other (aircraft, boats, etc.)	4,846
Hides, skins, raw furs, leather and tallow	9,898		
Wheat and other cereal grains	23,575	Household appliances, furniture, etc.—	
Other farm products, n.e.i.	972	Household appliances	33,450
Farm and garden supplies	77,545	China, glassware, kitchenware, etc.	6,066
		Garden equipment	954
Metals and minerals—		Furniture, mattresses and blinds	2,181
Iron and steel	37,170	Floor coverings	5,597
Scrap metal	5,274		
Other metals and minerals	5,782	Clothing, footwear and textile products—	
		Men's and boys' clothing	7,917
Machinery and equipment including parts—		Women's, girls' and infants' clothing	8,249
Agricultural machinery and implements	63,610	Footwear	1,462
Construction and earthmoving machinery	39,338	Textiles and textile products, n.e.i.	10,780
Industrial machinery for use in manufacturing, mining, etc.	54,974		
Machinery and equipment for commercial and service establishments	7,475	Foodstuffs—	
Professional and scientific equipment	4,740	Meat	38,358
Business machines, including computers	7,115	Dairy products, smallgoods and poultry	15,036
Electrical and electronic equipment, n.e.i.	29,190	Eggs and egg pulp	(b)
		Fresh fruit and vegetables	32,736
Building materials and supplies—		Fish	38,815
Timber, plywood and veneers	30,803	Confectionery	10,792
Glass	4,351	Groceries—Food lines only	50,245
Other basic building materials	25,633	Tea	3,121
Builders' hardware and supplies	80,421	Coffee	2,440
		Other food	1,545
Pharmaceuticals, toiletries and chemicals—		Beverages and tobacco products—	
Chemicals and allied products, n.e.i.	9,068	Soft drinks	1,134
Medical and pharmaceutical products	15,877	Wine and brandy	7,417
Toiletries, perfumes and cosmetics	5,516	Beer and other spirits	7,512
Soap and detergents	3,710	Cigarettes and other tobacco products	17,012
Petroleum, petroleum products and fuel—			
Petroleum and petroleum products	129,420	Miscellaneous—	
Liquefied petroleum gas	1,403	Books, periodicals and other printed matter	4,821
Coal, coke, briquettes and charcoal		Paper, paper products and stationery	14,631
		Photographic goods	4,699
Vehicles and transport equipment—		Watches, clocks, jewellery, etc.	2,322
Motor vehicles	36,224	Sporting goods and bicycles	3,984
Motor cycles and scooters	(b)	Toys and games	2,776
Motor vehicle parts, accessories and engines....	21,927	Fancy goods, gifts and souvenirs	2,191
		Secondhand goods, excluding motor vehicles	2,627
		Goods not included above	34,513
		Total	1,225,797

n.e.i. denotes 'not elsewhere included'.

(a) See letterpress immediately preceding table.

(b) Not available for publication.

Other Information Available

Further details about the Integrated Economic Censuses and more comprehensive data relating to the retail and wholesale sectors are available in a series of bulletins *Economic Censuses 1968-69: Retail Establishments and Selected Service Establishments, Western Australia* (published in four parts) and *Economic Censuses 1968-69: Wholesale Establishments (Final), Western Australia*. In addition, bulletins relating to each of the other States and Territories and Australia as a whole are available.

SURVEY OF RETAIL ESTABLISHMENTS

During the period between censuses, estimates of the value of retail sales are derived from returns received from a representative sample of retailers throughout Australia. These establishments account for approximately 45 per cent of the total retail sales in Australia. From these sample returns, totals for all retail establishments in Australia are estimated by methods appropriate to a stratified sample, using data from the most recent available retail census as a benchmark.

Annual revisions to the sample take account of the changing pattern of retail trade and ensure that new businesses entering the field are represented in the survey.

Quarterly estimates for each State and Australia as a whole in broad commodity groups are published by the Commonwealth Statistician in the bulletin *Retail Sales of Goods*. Preliminary monthly estimates of total retail sales in Australia (excluding motor vehicles, etc.), based on a sub-sample of the establishments used to provide the quarterly estimates, appear in *Retail Sales of Goods (Provisional)*. Retail sales statistics published in the quarterly bulletin *Retail Sales of Goods* subsequent to September quarter 1972 and the monthly bulletin *Retail Sales of Goods (Provisional)* subsequent to March 1973 are not comparable with those appearing in previous issues of the Year Book because of changes in the composition of the commodity groupings and in the scope and coverage of the census on which they are based.

DELIVERIES OF NEW AGRICULTURAL MACHINERY

The statistics in this section, which cover certain types of imported and Australian-made new agricultural machinery, have been derived from quarterly returns collected from principals marketing the equipment. Deliveries represent implements and machines sent to agents or dealers by the principals or by the State distributors, plus direct sales to final users by the principals or distributors. Additional information on receipts, deliveries and stocks is available in the quarterly bulletin *New Agricultural Machinery Statistics* issued by the Commonwealth Statistician, Canberra. Details for the five years ended 1972-73 are given in the following table.

DELIVERIES OF NEW AGRICULTURAL MACHINERY (a)
(Number)

Type of implement or machine	1968-69	1969-70	1970-71	1971-72	1972-73
Tillage implements—					
Disc ploughs—					
Tractor-mounting type	41	(b)	19	14	12
Trailing type	969	306	59	140	470
Agricultural rippers (sub-soilers)	153	150	55	45	85
Tine cultivators and scarifiers	(b)	242	181	242	588
Tine harrows (number of leaves or sections)	8,944	3,937	2,783	*4,378	5,855
Disc harrows	185	182	105	125	176
Rotary cultivators	351	(b)	206	308	253
Seeding and fertilising machinery—					
Drills and cultivating drills	975	336	142	(b)	440
Fertiliser spreaders, other than direct drop	512	273	214	358	474
Harvesting, haymaking and silage-making machinery—					
Pick-up balers	131	347	239	111	202
Forage harvesters	(b)	31	34	19	(b)
Headers (combine harvesters)—					
Self-propelled	192	103	127	122	252
Drawn	335	(b)	(b)	(b)	170
Agricultural mowers (4 ft cut and over) (c)—					
Reciprocating knife	(b)	229	191	137	235
Rotary mowers, slashers, and toppers	345	217	255	262	277
Pick-up bale loaders for baled hay	134	202	197	152	191
Bale elevators and stackers	104	151	157	129	151
Grain augers	(b)	(b)	(b)	(b)	(b)
Other agricultural machinery—					
Post-hole diggers (auger type)	(b)	212	71	79	183
Hammer mills (farm type)	135	99	(b)	160	56

(a) See letterpress immediately preceding table.
toppers. * Revised.

(b) Not available for publication.

(c) Excludes flail mowers and

SALES OF NEW TRACTORS

The following table has been derived from the quarterly collection of tractor statistics from businesses which distribute the various makes of new tractors throughout Australia. The figures for sales represent the number of new tractors delivered or in transit to end-users or to manufacturers of tractor attachments. For additional information, the reader is referred to the bulletin *Receipts, Sales and Stocks of New Tractors* issued quarterly by the Commonwealth Statistician, Canberra.

SALES OF NEW TRACTORS (a)
(Number)

Horsepower and shipping weight	Agricultural (b)			Non-agricultural (b)		
	1970-71	1971-72	1972-73	1970-71	1971-72	1972-73
WHEELED TRACTORS						
Maximum power take-off horsepower—						
Up to and including 15 hp	(c)	(c)	(c)	(c)	....	(c)
Over 15 hp and up to 25 hp	(c)	....	....	(c)	(c)	(c)
" 25 hp " " 35 hp	18	(c)	(c)	2	(c)	(c)
" 35 hp " " 45 hp	175	212	166	72	40	29
" 45 hp " " 60 hp	126	(c)	249	389	246	248
" 60 hp " " 80 hp	202	358	680	54	44	49
" 80 hp " " 100 hp	64	142	306	43	19	29
" 100 hp " "	39	51	185	84	61	63
Total	635	898	1,614	650	418	434
CRAWLER TRACTORS						
Shipping weight—						
Over 3,000 lb and up to 6,000 lb	....	....	....	....	(c)	(c)
" 6,000 lb " " 10,000 lb	....	....	....	(c)	(c)	(c)
" 10,000 lb " " 15,000 lb	(c)	....	(c)	(c)	(c)	(c)
" 15,000 lb " " 25,000 lb	(c)	(c)	(c)	(c)	(c)	(c)
" 25,000 lb " " 40,000 lb	....	....	(c)	28	17	(c)
" 40,000 lb " " ....	....	....	....	(c)	18	25
Total	(c)	(c)	(c)	(c)	(c)	(c)

(a) See letterpress immediately preceding table. (b) Includes wheeled tractors which are operated from in front of the engine when the vehicle is in forward motion, and articulated tractors. (c) Not available for publication.

WHOLESALE SALES AND STOCKS OF WINE AND BRANDY

WINE AND BRANDY—WHOLESALE SALES AND STOCKS
(See letterpress on page 430)

Type	Wholesale sales (a)			Stocks held by wholesalers and winemakers at 30 June—		
	1970-71	1971-72	1972-73	1971	1972	1973
	gallons	gallons	gallons	gallons	gallons	gallons
Wine—						
Sherry—						
Flor	34,774	27,671	26,646	33,903	19,194	20,384
Other dry	37,643	43,219	42,710	31,313	34,351	36,303
Medium (b)	170,757	174,476	161,458	55,135	80,813	75,342
Sweet	394,472	374,114	372,613	215,378	203,532	201,182
Dessert wines—						
Port (c)	165,410	172,830	187,987	157,747	156,470	151,588
Muscat (d)	166,958	156,754	142,772	202,746	164,364	140,307
Other (e)	56,376	66,145	73,136	23,141	42,392	28,997
Table wines (still, unfortified)—						
Dry white (f)	179,004	197,971	251,928	291,969	281,792	263,928
Dry red (g)	405,709	391,192	428,543	500,637	596,410	518,761
Sweet (h)	44,463	48,161	39,367	32,567	11,761	15,435
Rose	52,094	51,658	72,338	39,870	28,927	31,007
Sparkling wines (all types) (i)—						
White	130,745	124,730	122,609	25,891	24,795	21,852
Red and pink	59,531	68,413	80,949	8,221	12,878	8,764
Wine cocktails, etc. (j)	26,749	35,194	36,830	5,758	4,032	6,012
Vermouth	45,219	49,901	49,293	13,227	15,444	16,714
Total, Wine	1,969,904	1,982,429	2,089,179	1,637,503	1,677,155	1,536,576
	proof gallons	proof gallons	proof gallons	proof gallons	proof gallons	proof gallons
Brandy	117,470	127,618	146,571	19,607	19,852	25,223

(a) Comprises sales (both local and interstate) made by wholesalers and winemakers from stocks held in Western Australia. Excludes sales to wholesalers and winemakers for resale by them, overseas exports, and sales for ships' stores. (b) Includes medium dry and medium sweet. (c) Other than white. (d) Includes Frontignac. (e) Includes Madeira, Tokay, Marsala and White Port. (f) Includes Riesling, Hock, Moselle, Chablis and White Burgundy. (g) Includes Claret and Burgundy. (h) Includes Sauternes and Graves. (i) Includes carbonated and pearl-type wines, etc. (j) Includes aperitif wines and tonic wines.

Each year details are obtained from winemakers, wholesale merchants, and importers, of the quantities of the various types of wine and brandy held in stock at 30 June or sold to retailers and consumers during the previous twelve months. The survey thus covers all sales of wine and brandy by wholesalers and manufacturers in the State except sales made to other wholesalers or manufacturers for resale by them, or to overseas purchasers. Although the figures for sales in the previous table are free of duplication, they should not be regarded as showing actual consumption in Western Australia as they include sales to retailers and consumers in other States and, conversely, exclude purchases from other States by Western Australian retailers and consumers.

Chapter IX—continued

Part 3—Transport

Western Australia's main transport systems are based generally on Perth, the capital, and on Fremantle, the principal port. Subsidiary systems are centred on a number of outports north and south of Fremantle and on some inland towns.

The railway system extends from Fremantle, Perth and Midland for hundreds of miles into the mining, agricultural, pastoral and forest areas in the southern half of the State. There is also a well-developed road system in this area, and the coastal towns in the north-west and the north are connected by road with the south and with the pastoral and mining areas of the hinterland. International flights operate through the airport at Perth, which is also the centre of a comprehensive network of airline services to towns in Western Australia and to the capital cities of other States.

In recent years important mineral developments in the north-west have led to the provision of deep-water port facilities and the construction of railways and roads connecting them with the extensive iron-ore deposits now being exploited.

The following table shows distances by road, rail, sea and air between Perth and selected towns and localities in Western Australia.

**DISTANCES BETWEEN PERTH AND SELECTED TOWNS AND LOCALITIES
IN WESTERN AUSTRALIA**

Town or locality	Road (*)	Rail	Sea (a)	Air (b)	Town or locality	Road (*)	Rail	Air (b)
North of 26°S. latitude—	kilo-	kilo-	nautical	route	South of 26°S. latitude—	kilo-	kilo-	route
Coastal—	metres	metres	miles	kilo-	Inland—continued	metres	metres	metres
Broome	2,210	....	1,193	1,674	Bruce Rock	240	311	....
Carnarvon	982	....	484	824	Collie	203	200	....
Dampier	1,637	....	857	1,287	Coolgardie	558	586	....
Denham (Shark Bay)	911	....	479	....	Donnybrook	214	212	....
Derby	2,367	....	1,358	1,819	Forrest ....	....	1,260	....
Exmouth	1,344	....	683	1,115	Harvey	140	138	....
Onslow	1,418	....	733	1,164	Hyden	340	554	....
Port Hedland	1,658	....	957	1,323	Kalgoorlie	597	655	536
Roebourne	1,643	....	(c) 885	1,304	Kambalda	632	....	....
Wyndham	3,224	....	1,761	2,343	Katanning	282	393	....
Inland—					Koolyanobbing	423	457	....
Fitzroy Crossing	2,535	....	....	2,039	Leonora	834	884	620
Goldsworthy	1,704	....	....	1,416	Madura	1,255	....	....
Halls Creek	2,849	....	....	2,253	Manjimup	307	317	....
Kununurra	3,217	....	....	2,383	Meekatharra	768	978	644
Marble Bar	1,481	....	....	1,477	Merredin	261	285	....
Newman	1,188	....	....	1,025	Moora	188	174	....
Nullagine	1,368	....	....	1,561	Mount Barker	359	517	....
Tom Price	1,548	....	....	1,046	Mukinbudin	311	359	....
Wittenoom Gorge	1,450	....	....	1,114	Mullewa	467	546	....
South of 26°S. latitude—					Nannup	286	291	....
Coastal—					Narrogin	188	291	....
Albany	409	581	353	378	Newdegate	398	523	....
Augusta	301	....	....	....	Norseman	726	761	554
Bunbury	156	185	104	....	Northam	98	122	....
Busselton	208	240	129	....	Pinjarra	87	87	....
Esperance	739	962	560	581	Ravensthorpe	539	....	....
Eucla	1,436	....	....	....	Southern Cross	370	401	....
Fremantle	18	19	....	....	Wagin	227	341	....
Geraldton	502	492	215	375	Wiluna	951	....	789
Inland—					Wyalkatchem	192	238	....
Bridgetown	272	280	....	....	York	97	156	....

(a) From Fremantle. (b) Shortest regular route. (c) Distance to Point Samson. (*) Figures revised since previous issue.

Distances by road, rail, sea and air between Perth and other capital cities in Australia are shown in the next table.

DISTANCES BETWEEN PERTH AND OTHER CAPITAL CITIES

Method of travel	Canberra	Sydney	Melbourne	Brisbane	Adelaide	Hobart	Darwin
Road kilometres	(a) 3,954	(a) 4,175	(a) 3,489	(a) 5,185	2,742	(b) 3,722	4,126
Rail kilometres	(c) 4,273	(d) 3,961	3,431	(d) 4,947	2,654	.....	.....
Sea nautical miles	.....	(e) 2,141	(e) 1,686	(e) 2,630	(e) 1,347	(e) 1,826	(e) 1,842
Air route kilometres	3,277	3,352	2,800	4,107	2,152	3,417	2,855

(a) Via Adelaide. (b) Via Melbourne and Bell Bay and excludes 250 nautical miles from Melbourne to Bell Bay. (c) Via Melbourne. (d) Via Broken Hill. (e) From Fremantle.

SHIPPING

Western Australia's sea-borne trade is conducted through the Port of Fremantle and a number of outports. Of these, Geraldton, Bunbury, Busselton (see reference on page 435), Albany and Esperance are situated in the more highly-developed south-western and southern part of the State. The less closely-settled areas of the north-west and the north are served by ports and other landing points at Useless Loop (Shark Bay), Carnarvon, Cape Cuvier, Exmouth, Onslow, Barrow Island, Dampier, Cape Lambert, Point Samson, Port Walcott, Port Hedland, Broome, Derby, Yampi and Wyndham.

The following table shows the number of entrances and the net tonnage of vessels entering each port, and the tonnage of cargo discharged at and shipped from each port, during the years 1970-71 and 1971-72. The figures exclude particulars of naval vessels; yachts and other craft used for pleasure; foreign fishing vessels that neither load nor discharge cargo; fishing vessels registered in Australia; vessels engaged in geographic, seismic or oceanographic surveys; offshore oil-drilling rigs and vessels servicing them; and vessels of 200 registered net tons and under.

ENTRANCES OF VESSELS AND CARGO HANDLED AT PORTS

Port	Entrances of vessels				Cargo handled			
	1970-71		1971-72		1970-71		1971-72	
	Number	Net tonnage of vessels	Number	Net tonnage of vessels	Discharged	Shipped	Discharged	Shipped
		'000		'000	'000 tons	'000 tons	'000 tons	'000 tons
Port of Fremantle	1,469	10,845	1,524	11,657	6,509	6,606	6,584	6,821
Other ports—								
Albany	168	967	167	1,021	217	616	205	648
Barrow Island (a)	62	960	53	802	1	2,100	1	1,987
Broome	116	300	115	354	48	13	38	13
Bunbury	156	807	138	776	274	881	254	862
Busselton (b)	1	1	1	1	.....	1	.....	2
Carnarvon (c)	101	779	87	740	32	1,822	24	1,779
Dampier	475	6,918	396	6,522	356	19,005	272	18,633
Derby	72	139	74	167	34	6	28	2
Esperance	94	531	67	403	201	598	143	362
Exmouth	15	56	10	50	9	(d)	9	(d)
Geraldton	125	776	123	791	166	1,404	74	1,274
Onslow	27	52	26	60	4	(d)	1	1
Port Hedland	592	8,155	546	8,718	258	22,756	324	25,844
Port Walcott (e)	75	132	131	361	55	3	276	8
Wyndham	91	281	96	316	47	15	40	32
Yampi	172	1,457	149	1,315	52	3,458	235	3,091
Total	2,342	22,311	2,179	22,396	1,756	52,677	1,924	54,537
All ports	3,811	33,156	3,703	34,054	8,265	59,283	8,508	61,358

(a) Buoyed sea terminal. (b) See page 435. (c) Includes Cape Cuvier and Useless Loop. (d) Less than 500 tons. (e) Includes Cape Lambert and Point Samson.

The net tonnage of a vessel, expressed in tons of 100 cubic feet, represents the volume of enclosed space that can be used for cargo and passengers. Most cargoes are recorded in terms of the ton weight of 2,240 lb but some cargo, consisting mainly of bulky commodities, is recorded on the basis of the ton measurement, a unit equivalent to forty cubic

feet of space. Statistics are compiled accordingly in terms of 'tons weight' or 'tons measurement'. In order to provide a ready comparison, as in the previous table, of the volume of cargo handled at the several ports or in different years, the amounts recorded in the two categories have been aggregated. In the following table, details of cargo handled at each port during 1971-72 are presented separately on the basis of 'tons weight' and 'tons measurement'.

TONNAGE OF OVERSEAS, INTERSTATE AND INTRASTATE CARGO: 1971-72
(Tons)

Port	Overseas		Interstate		Intrastate		Total	
	Weight	Measurement	Weight	Measurement	Weight	Measurement	Weight	Measurement
DISCHARGED								
Port of Fremantle	4,238,225	251,785	1,233,568	4,788	846,781	9,063	6,318,574	265,636
Other ports—								
Albany	137,123	60	447	....	67,281	....	204,851	60
Barrow Island (a) ....	....	....	....	....	2	885	2	885
Broome	8,568	81	1,000	302	18,549	9,345	28,117	9,728
Bunbury	137,597	60	....	....	116,490	....	254,087	60
Busselton (b) ....	....	....	....	....	....	....	....	....
Carnarvon (c)	12,521	....	....	....	11,712	....	24,233	....
Dampier	205,796	4,953	17,615	11,315	27,801	4,697	251,212	20,965
Derby	9,613	....	1,157	17	6,608	11,102	17,378	11,119
Esperance	95,115	....	6,466	....	41,405	....	142,986	....
Exmouth	1,226	....	....	....	7,594	....	8,820	....
Geraldton	58,270	....	....	....	16,020	....	74,290	....
Onslow ....	....	....	....	....	608	191	608	191
Port Hedland	124,989	11,370	5,103	1,707	169,544	10,833	299,636	23,910
Port Walcott (d)	95,001	32,191	16,672	13,709	89,833	28,514	201,506	74,414
Wyndham	14,487	....	2,172	26	11,642	11,712	28,301	11,738
Yampi	396	....	85,947	....	145,164	3,499	231,507	3,499
Total	900,702	48,715	136,579	27,076	730,253	80,778	1,767,534	156,569
All ports	5,138,927	300,500	1,370,147	31,864	1,577,034	89,841	8,086,108	422,205
SHIPPED								
Port of Fremantle	4,382,333	293,371	1,372,694	12,696	674,724	85,109	6,429,751	391,176
Other ports—								
Albany	645,453	2,375	....	....	....	12	645,453	2,387
Barrow Island (a)	372,014	....	922,482	....	692,208	50	1,986,704	50
Broome	7,145	1,103	32	335	528	3,517	7,705	4,955
Bunbury	721,160	28,523	49,812	....	62,111	....	833,083	28,523
Busselton (b)	325	1,674	....	....	....	....	325	1,674
Carnarvon (c)	1,778,983	....	....	....	....	....	1,778,983	....
Dampier	18,631,562	....	....	4	605	370	18,632,167	374
Derby ....	....	....	2	93	361	1,558	363	1,651
Esperance	349,582	12,521	....	....	....	....	349,582	12,521
Exmouth	115	49	....	....	273	....	388	49
Geraldton	1,248,586	16,518	....	....	206	8,440	1,248,792	24,958
Onslow ....	....	....	....	....	204	671	204	671
Port Hedland	24,630,502	25	1,205,968	383	3,631	3,673	25,840,101	4,081
Port Walcott (d)	10	....	14	21	7,442	371	7,466	392
Wyndham	17,393	1,901	1,368	156	7,216	4,274	25,977	6,331
Yampi	1,765,328	....	1,186,011	11	137,944	1,392	3,089,283	1,403
Total	50,168,158	64,689	3,365,689	1,003	912,729	24,328	54,446,576	90,020
All ports	54,550,491	358,060	4,738,383	13,699	1,587,453	109,437	60,876,327	481,196

(a) Buoyed sea terminal.
Lambert and Point Samson.

(b) See page 435.

(c) Includes Cape Cuvier and Useless Loop.

(d) Includes Cape

Apart from general cargo, overseas and interstate consignments discharged were principally petroleum products, rock phosphate, iron and steel products, coke and sulphur. Outward cargoes, with the exception of refined petroleum products and steel products shipped from the Port of Fremantle (Outer Harbour), consisted largely of primary products, including minerals. Cargo shipped from Esperance comprised mainly cereal grains, nickel ore and salt and from Albany cereal grains, wool and whale oil. From Bunbury the principal cargoes shipped were mineral sands, cereal grains and timber. Exports from Busselton consisted almost entirely of timber. Iron ore and cereal grains were the main

items shipped from Geraldton. In the northern part of the State, Dampier, Port Hedland and Yampi are the major ports for the shipment of iron ore. The buoyed sea terminal at Barrow Island provides facilities for the loading of crude petroleum. From other ports in the area, cargo shipped consisted mainly of cotton, cotton seed, meat, and minerals, including salt and gypsum.

The Western Australian Coastal Shipping Commission was established in 1965 to carry on the services formerly maintained by the State Shipping Service. The Commission's ships operate along the north-west and northern coasts, calling regularly at ports between Fremantle and Darwin (Northern Territory). Besides general cargo, the freight discharged at north-west and northern ports consists mainly of refined petroleum products, building and construction materials, refrigerated cargo, vehicles and livestock. Cargoes carried south to Fremantle are mainly primary products, such as cotton, meat, livestock, wool, crude petroleum and minerals.

SHIPPING—ENTRANCES AND CLEARANCES: 1971-72

Port	From or to overseas countries			From or to other Australian States		From or to other Western Australian ports	Total		
	Direct	Via other Australian States	Via other Western Australian ports	Direct	Via other Western Australian ports		Number	Net tonnage of vessels ('000)	
ENTRANCES									
Port of Fremantle	691	298	224	168	39	104	1,524	11,657	
Other ports—									
Albany	68	36	56	....	....	7	167	1,021
Barrow Island (a)	3	....	18	15	....	17	53	802
Broome	10	8	16	12	3	66	115	354	
Bunbury	40	12	55	5	....	26	138	776
Busselton (b)	....	....	1	....	....	....	1	1
Carnarvon (c)	58	....	29	....	....	....	87	740
Dampier	293	11	19	2	1	70	396	6,522	
Derby	7	1	5	9	....	52	74	167
Esperance	24	10	26	1	....	6	67	403
Exmouth	2	1	3	....	....	4	10	50
Geraldton	87	5	21	....	....	10	123	791
Onslow	....	....	9	....	....	26	26	60
Port Hedland	398	15	....	8	12	104	546	8,718
Port Walcott (d)	23	1	25	....	9	73	131	361
Wyndham	10	17	8	9	....	52	96	316
Yampi	40	1	3	29	1	75	149	1,315	
Total	1,063	118	294	90	26	588	2,179	22,396	
All ports	1,754	416	518	258	65	692	3,703	34,054	
CLEARANCES									
Port of Fremantle	788	278	147	145	50	117	1,525	11,668	
Other ports—									
Albany	62	20	77	....	....	7	166	1,012
Barrow Island (a)	10	1	9	18	....	17	55	844
Broome	3	2	28	....	9	72	114	349
Bunbury	29	12	65	5	....	26	137	771
Busselton (b)	....	....	1	....	....	....	1	1
Carnarvon (c)	74	3	11	....	....	....	88	743
Dampier	310	9	11	....	2	71	403	6,649
Derby	2	....	11	....	21	40	74	167
Esperance	27	13	20	1	....	6	67	403
Exmouth	....	....	6	....	....	4	10	50
Geraldton	53	2	58	....	....	10	123	792
Onslow	....	....	....	....	....	26	26	60
Port Hedland	401	2	22	23	15	97	560	9,021	
Port Walcott (d)	7	7	35	3	5	74	131	361	
Wyndham	10	7	21	14	4	41	97	318	
Yampi	34	2	3	48	5	57	149	1,302	
Total	1,022	80	378	112	61	548	2,201	22,843	
All ports	1,810	358	525	257	111	665	3,726	34,511	

(a) Buoyed sea terminal.
Lambert and Point Samson.

(b) See page 435.

(c) Includes Cape Cuvier and Useless Loop.

(d) Includes Cape

In the previous table vessels entered at and cleared from each Western Australian port during 1971-72 are classified according to the direction of the voyage on which each vessel was engaged. 'Direction' is determined by reference to the port of commencement of the inward voyage or the port of termination of the outward voyage.

Administration of Ports

The State Government, through the Harbour and Light Department, controls the ports at Broome, Carnarvon, Derby, Onslow, Port Walcott (Cape Lambert and Point Samson) and Wyndham. The ports at Albany, Bunbury, Esperance, Fremantle, Geraldton and Port Hedland are controlled by separately-constituted authorities established by Act of Parliament. Private operators control the ports (or landing points) at Barrow Island, Cape Cuvier, Dampier, Exmouth, Useless Loop and Yampi.

In terms of a proclamation made under the provisions of the *Shipping and Pilotage Act, 1967*, Busselton ceased to be a port for the purposes of the Act with effect from 1 September 1972.

THE PORT OF PORT HEDLAND (1)

The port of Port Hedland, located on the north-west coast of Western Australia, was named (in 1863 by Surveyor C. C. Hunt) after Peter Hedland, Master of the sixteen-ton cutter 'Mystery' which sailed in these parts. Situated 1,323 air kilometres north of Perth, Port Hedland has a generally hot and fairly dry climate, with an average rainfall of little more than 300 millimetres each year.

The district was settled by pastoralists in 1863 and the discovery of the Pilbara Goldfields in 1888 and the development of tin mining near Marble Bar and Nullagine in the hinterland led to expansion of the port which was linked by rail to Marble Bar in 1912. This railway was closed in 1951. Before 1964, the district was quiet sheep-station country similar to many outback areas in Australia. Port Hedland itself had a population of less than 1,000 people and the town's small jetty handled ships up to approximately 5,000 ton capacity, a bar across the channel entrance preventing larger ships from entering the harbour. By June 1973, however, population had grown to over 10,000 and, as a result of massive dredging operations, Port Hedland had become one of the few ports in the world capable of handling 160,000 deadweight-ton ore carriers. In terms of tonnages shipped each year, it was one of the most important ports in Australia. During the year ended June 1973, 435 iron ore carriers and 267 other ships entered the port, the latter figure including 114 vessels which called at the port to take on stores, fresh water and fuel only. A further nineteen calls were made by Australian Government vessels. Inward cargoes for the year totalled some 190,000 tons and outward cargoes totalled 33,267,000 tons.

The port of Port Hedland is operated by a corporate body, the Port Hedland Port Authority, established by the *Port Hedland Port Authority Act, 1970*. The Authority consists of a Chairman and four members, two of whom are nominees of Mount Newman Joint Venturers and Goldsworthy Mining Limited, respectively. The Mt. Newman Mining Co. Pty. Limited operates one of the world's largest iron ore enterprises at Mount Whaleback, 426 kilometres south-east of Port Hedland, and Goldsworthy Mining Limited mines iron ore from deposits at Mount Goldsworthy, about 113 kilometres east of Port Hedland and at Shay Gap and Kennedy Gap, some sixty-four kilometres east of Mount Goldsworthy.

Port Hedland, entered between Airey Point (latitude 20°18'S., longitude 118°35'E.) and Hunt Point, about 3.25 cables to the north-north-west, is a secure harbour with dredged channel giving a depth of 12.8 metres below datum, a turning basin with a depth of 8.84 metres below datum, and a small-craft anchorage with a depth of 5.18 metres. The channel extends some 12.5 kilometres to seaward from the turning basin and is defined by beacons, buoys, and leading marks. The limits of the port area controlled by the Port

(1) See *Appendix* for details of previous articles on ports in Western Australia. A portion of Chart L (D4) Aus. 53—Approaches to Port Hedland—is reproduced on page 437 by courtesy of Captain J. H. S. Osborn, Hydrographer, R.A.N.

Authority are set out in detail in the First Schedule to the *Port Hedland Port Authority Act, 1970* but, briefly, are all the water area up to the high water mark within a radius of ten nautical miles off Hunt Point Beacon (No. 29). The Inner Harbour of Port Hedland is the area extending south from this beacon and it contains six berths, three of which are privately owned and operated. Tidal variations reach a maximum of 5.79 metres in the Port Hedland area and ship movements are governed by the strength of the tidal current.

Goldsworthy Pier is situated on the western side of the harbour, on Finucane Island, and lies south-west of the Hunt Point Beacon. The length of the berth is 381 metres with a depth alongside of 15.85 metres, the ship loading facility having a maximum capacity of 4,500 tons per hour. The first shipment of iron ore from Goldsworthy Pier was in the 'Harvey S. Mudd' which sailed for Japan on 2 June 1966 carrying 24,900 tons of ore. In the first five years of operation more than 20 million tons of ore were shipped.

Mount Newman Piers A and B, which are continuous berths, have a combined length of 658 metres. Pier A, the northward berth, extends for a distance of 305 metres and the depth alongside is 18.29 metres. Pier B, the southward berth, has a length of 353 metres and is dredged to a depth of 17.07 metres below datum. Each berth is served by a ship loader with a capacity of 6,000 tons per hour. The first shipload of Mount Newman ore left Port Hedland for Japan on 1 April 1969. In the first four years of operation, more than 60 million tons of iron ore were shipped to steel mills in Japan, Britain, France, the Federal Republic of Germany, the Netherlands, Belgium, Italy, Spain and to mills in other Australian States.

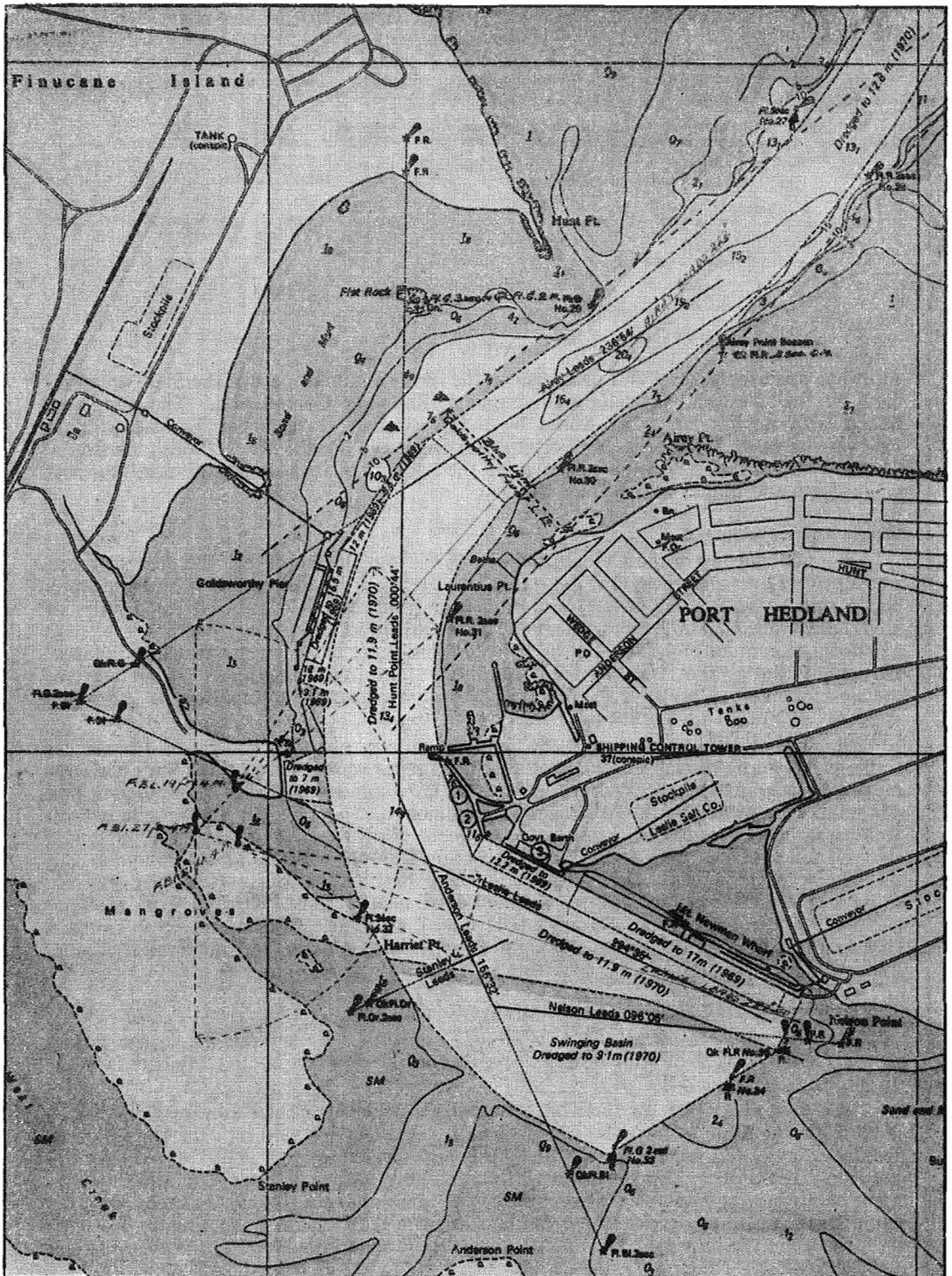
During 1974 a new land-backed general cargo berth, with a length of 213 metres, a depth alongside of 12.2 metres, and a dry cargo storage shed of some 500 square metres floor area, will come into service as a replacement for the old No. 1 berth timber jetty, originally constructed in 1898. No. 2 berth, a timber jetty, has a length of 129 metres and a depth in the basin alongside of 6.71 metres. This berth is used for loading manganese ore by means of a bulk loader giving a loading rate of about 200 tons per hour. No. 3 berth is a steel and concrete structure with a berth face of 183 metres and a depth alongside of 12.19 metres. It handles general cargo, tankers and salt vessels. A ship-loader with a maximum capacity of 1,500 tons per hour is operated on this berth by the Leslie Salt Company and there is a general cargo shed with a floor area of some 1,600 square metres. The primary concentrating plant of the Leslie Salt Company is some thirty-two kilometres east of Port Hedland in a dry lake bed, and the first shipment of salt through this port was made in March 1969.

At Port Hedland one of the most modern shipping control towers in Australia operates twenty-four hours a day to co-ordinate all shipping movements. This tower is equipped with V.H.F. radio telephone on international channels 16, 12, 10, 8 and 6; radar; visual signalling apparatus; and a wind and tide recording instrument. The approaches to the port are covered by the Decca Navigator System, an electronic navigation aid, which gives very accurate position-fixing facilities to vessels using the port with an accuracy of 24.4 metres up to eighty kilometres away. There are five privately-owned tugs in the port, each of 2,400 hp with a bollard pull of 32-36 tons. A helicopter service operates in connection with the transport of marine pilots to and from vessels entering and leaving the port and during the year ended 30 June 1973, 548 flights were flown to service 50 per cent of vessel calls. Service by means of a conventional pilot vessel is provided for oil tankers and other vessels unsuited to helicopter landings.

Details of the operations of the Port Hedland Port Authority for the three years ended 30 June 1973 are given in the following table.

PORT HEDLAND PORT AUTHORITY OPERATIONS

Particulars	Unit	1970-71	1971-72	1972-73
Earnings	\$		3,122,394	5,997,461
Working expenses	\$		1,033,834	1,087,043
Excess of Earnings over Working expenses		Not available	2,088,560	4,910,418
Other charges	\$		350,859	467,390
Net surplus	\$		1,737,701	4,443,028



PORT HEDLAND PORT AUTHORITY OPERATIONS—*continued*

Particulars	Unit	1970-71	1971-72	1972-73
Cargo tonnage—				
Inward—				
Bulk oil	ton	152,536	187,135	158,415
General cargo	ton	118,642	98,451	31,212
Total	ton	271,178	285,586	189,627
Outward—				
Iron ore	ton	21,902,358	25,102,178	32,765,741
Salt	ton	675,927	389,419	456,060
Manganese	ton	176,256	126,297	42,261
General cargo	ton	5,605	3,663	2,598
Total	ton	22,760,146	25,621,557	33,266,660

RAILWAYS

Railways open for general and passenger traffic in the southern part of the State are operated by the Western Australian Government Railways Commission. The system is linked with railways of other States by the Australian Government Trans-Australian Railway between Kalgoorlie in Western Australia and Port Pirie in South Australia. There are, in addition, private railways for the haulage of iron ore in the northern part of the State and timber in the south-west.

Origin and Development

The first railway in the Colony, built in 1871 from Busselton into the nearby forest, was a private line constructed for the transport of timber. By the end of 1900, the Colony had a railway system for general and passenger traffic which comprised 1,355 miles of government line and 277 miles of privately-owned line. The State Government system reached a maximum of 4,381 miles in 1940 but this figure has been subsequently reduced, particularly during the 1960s, by the closure of certain non-paying lines. A summary of the development of railways in Western Australia appeared in the *Western Australian Year Book*, No. 7—1968 and earlier issues.

At 30 June 1973 there were 4,286 miles of railway open for general and passenger traffic in Western Australia. Of this total, 3,832 miles were owned by the State Government and operated by the Western Australian Government Railways Commission, and 454 miles were owned by the Australian Government and operated by the Commonwealth Railways. The Western Australian Government Railways Commission also operated thirteen miles of privately-owned line connecting iron-ore deposits at Koolanooka with its railway to Geraldton. Other private railways used for the transport of iron ore were those between Newman and Port Hedland (265 miles), Shay Gap and Port Hedland (121 miles), Paraburdoo and Dampier (237 miles), and Pannawonica and Cape Lambert (104 miles). In addition, there were eighteen miles of private railway operated by timber millers.

The Western Australian Government Railways Commission

The *Government Railways Act, 1904-1973* constitutes a Commission, in the person of the Commissioner of Railways, who is responsible, subject to the Minister, for the administration of the Act.

Financial procedure for the Western Australian Government Railways Commission is basically the same as for other Departments. Receipts are paid into the Consolidated Revenue Fund, and finance for its operations and the servicing of debt is provided from the Fund by statutory appropriations. Loan moneys, for the construction and improvement of permanent way, for the purchase of traction units and rolling stock and for other capital outlay, are advanced by the Parliament from the General Loan Fund. The loan liability of the Western Australian Government Railways Commission to the Treasury was \$167,845,062 at 30 June 1973, the net increase during 1972-73 being \$3,013,636.

In addition to its railway services, the Commission operates an extensive system of road services for the carriage of passengers, mail and freight. A map showing the routes operated by the road services appeared in the 1967 issue of the Year Book.

Summary of Operations. The following table gives particulars of the financial transactions, railway operations and road service operations of the Western Australian Government Railways for each of the years 1968-69 to 1972-73.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
FINANCE (a)					
Capital investment at 30 June (b)	\$'000 155,697	\$'000 161,786	\$'000 164,813	\$'000 164,831	\$'000 167,845
Operating revenues—					
Passenger fares	3,471	4,104	4,238	4,157	4,430
Parcels and mails	1,699	1,752	1,725	1,621	1,758
Paying goods and livestock	43,375	48,580	52,761	55,597	54,428
Miscellaneous	2,013	2,803	3,193	3,471	4,177
Total operating revenues	50,558	57,240	61,917	64,846	64,793
Operating expenses	44,503	48,550	53,205	57,112	61,011
Excess of operating revenues over expenses	6,055	8,689	8,713	7,735	3,782
Depreciation	6,574	7,632	7,721	7,974	8,797
Interest charges	9,533	10,631	11,697	11,909	12,041
Total deficit	10,052	9,573	10,705	12,148	17,057

RAILWAY OPERATIONS

Route mileage at 30 June—					
3 ft 6 in gauge (c)	3,381	3,379	3,388	3,350	3,349
4 ft 8½ in gauge	377	375	375	375	408
Dual gauge	68	74	74	75	75
Employees at 30 June	10,940	10,613	10,144	10,167	9,843
	'000	'000	'000	'000	'000
Number of—					
Train miles run (d)	8,680	8,633	8,771	8,501	7,973
Passenger-journeys—					
Suburban	9,832	10,227	10,557	10,800	11,143
Country	338	352	362	350	376
Total	10,170	10,580	10,919	11,150	11,518
Tons of freight—					
Paying goods and livestock	8,934	10,665	13,244	13,648	13,489
Departmental (e)	517	611	529	455	381
Total	9,452	11,277	13,774	14,104	13,870
Ton mileage—					
Paying goods and livestock	1,525,835	1,749,116	2,077,965	2,108,501	2,254,278
Departmental	37,327	45,178	40,353	30,960	37,406
Total	1,563,162	1,794,293	2,118,317	2,139,460	2,291,684

ROAD SERVICE OPERATIONS

Route mileage at 30 June—					
Omnibus	4,045	4,119	4,044	4,095	4,095
Freight vehicle	(f)	2,004	2,004	2,015	2,015
Employees at 30 June	254	262	269	269	273
	'000	'000	'000	'000	'000
Number of—					
Miles run—					
Omnibus	1,958	1,930	1,867	1,772	1,650
Freight vehicle	1,011	978	983	*1,016	1,048
Total	2,969	2,908	2,849	*2,788	2,699
Passenger-journeys	234	222	207	180	170

(a) Includes financial transactions in relation to road services. mileage of 3 ft 6 in gauge line which parallels the 4 ft 8½ in gauge line. departmental freight comprises mainly oil, ballast, timber and rails.

(b) Including Stores Funds.

(d) Revenue and non-revenue train miles.

(f) Not available.

(c) Excludes route

(e) De-

* Revised.

Goods and Livestock Carried. The following table shows the tonnage of paying goods and livestock carried during each year in the period from 1968-69 to 1972-73. The classification used in the table is that adopted by the Railways Commission in dissecting its freight transport statistics. The actual number of livestock carried in each of the five years is given in the second part of the table.

**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
TONNAGE OF PAYING GOODS AND LIVESTOCK CARRIED**

Freight classification	1968-69	1969-70	1970-71	1971-72	1972-73
Wheat	1,512,215	2,280,523	2,424,220	2,537,805	1,949,174
Other grain	265,970	140,786	580,809	830,646	365,718
Grain products	45,254	43,525	45,299	37,945	36,196
Chaff	6,863	.....	.....	.....	.....
Fertilisers	666,714	559,862	413,765	415,839	576,528
Fruit and vegetables	103,629	102,113	88,106	47,855	51,552
Wool	141,964	126,340	128,908	143,903	114,223
Timber	332,900	333,442	291,584	276,812	279,608
Firewood	147	.....	.....	.....	.....
Coal, etc.	229,242	135,129	186,201	191,343	160,184
Ores and minerals	4,352,432	5,435,810	7,471,275	7,545,603	8,197,752
Oil in tank wagons	256,116	266,091	315,711	303,346	331,381
Other classifications	933,330	1,157,361	1,228,875	1,237,453	1,343,957
Livestock (\$)	87,701	84,410	69,686	79,925	82,935
Total	8,934,477	10,665,392	13,244,439	13,648,475	13,489,208
(\$ Number of livestock carried—					
Sheep	1,508,721	1,552,640	1,117,620	1,294,723	1,394,658
Cattle	57,082	46,085	50,562	58,259	58,255
Pigs	83,588	90,696	69,251	73,304	82,605
Horses	582	541	460	588	497

Railways Rolling Stock. The following table shows the numbers of the various categories of rolling stock of the Western Australian Government Railways in service at 30 June for the years 1969 to 1973.

**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
ROLLING STOCK IN SERVICE**

Category	At 30 June—									
	1969	1970	1971	1972	1973	1969	1970	1971	1972	1973
	3 ft 6 in gauge					4 ft 8½ in gauge				
Locomotives—										
Steam	204	154	48	48	2	....	....	....	....	....
Diesel—										
Electric	105	121	136	140	144	42	42	42	42	42
Mechanical	4	4	4	4	4	....	....	....	....	....
Hydraulic	11	11	11	13	16	....	....	....	....	....
Total	324	290	199	205	166	42	42	42	42	42
Coaching stock—										
Passenger cars	63	57	37	35	35	....	....	....	....	....
Sleeping cars	57	52	51	51	50	....	....	....	....	....
Lounge, buffet, and dining cars	11	11	11	11	11	....	....	....	....	....
Rail motor cars	47	46	45	45	45	....	....	....	5	5
Rail motor trailers	36	36	36	36	36	....	....	....	3	3
Service vehicles (a)	11	12	12	12	11	....	....	....	....	....
Total	225	214	192	190	188	....	....	....	8	8
Goods stock (b)	11,447	11,259	11,220	10,998	10,478	654	840	1,129	1,145	1,145
Service stock (c)	868	875	813	764	585	108	109	98	95	95

(a) Consists of inspection, track recorder, ministerial, vice-regal and special cars. (b) Includes brake vans, goods wagons, livestock wagons, mineral wagons, etc. (c) Includes ballast wagons, workmen's vans, ash disposal wagons, water tanks, etc. Excludes service vehicles shown under *Coaching stock*; see footnote (a).

Iron-ore Railways

In recent years the exploitation of extensive inland deposits of iron ore in Western Australia has necessitated the construction of a number of railways for the transport of ore from the mines to the coast. Conditions applying to the construction and operation of these railways are incorporated in agreements made between the State Government and mining companies and ratified by Act of Parliament.

The following summary relates to railways in use for the transport of iron ore at 30 June 1973. The quantity of ore carried on these railways was 26.0 million tons in 1969, 36.6 million tons in 1970, 44.7 million tons in 1971, 52.1 million tons in 1972 and 71.9 million tons in 1973. At 30 June 1973 there were ninety-one locomotives and 3,917 ore wagons in service.

RAILWAYS USED FOR TRANSPORT OF IRON ORE

Railway	Enabling Act	Length (route miles)	Gauge	Date operative (a)
Westmine-Tilley (b)	No. 104 of 1964 (c)	13	3 ft 6 in	1966—31 January
Shay Gap-Port Hedland (d)	No. 97 of 1964 (e)	121	4 ft 8½ in	1966—23 May
Paraburdoo-Dampier (d)	No. 24 of 1963 (f)	237	4 ft 8½ in	1966—1 July
Koolyanobbing-Kwinana (g)	No. 27 of 1961 (h)	304	4 ft 8½ in	1967—10 April
Newman-Port Hedland (d)	No. 75 of 1964 (i)	265	4 ft 8½ in	1969—18 January
Pannawonica-Cape Lambert (d)	No. 91 of 1964 (j)	104	4 ft 8½ in	1972—6 July

(a) Date on which first load of iron ore was dispatched from mine. (b) Privately owned, but operated by the Western Australian Government Railways Commission. Connected at Tilley to the Western Australian Government Railways' line to the Port of Geraldton. (c) *Iron Ore (Tallering Peak) Agreement Act, 1964.* (d) Privately owned and operated. (e) *Iron Ore (Mount Goldsworthy) Agreement Act, 1964.* (f) *Iron Ore (Hamersley Range) Agreement Act, 1963.* (g) Part of the Western Australian Government Railways' system; open for general and passenger traffic. (h) *Railways (Standard Gauge) Construction Act, 1961.* See also letterpress on page 443. (i) *Iron Ore (Mount Newman) Agreement Act, 1964.* (j) *Iron Ore (Cleveland-Cliffs) Agreement Act, 1964.*

Commonwealth Railways

The Commonwealth Railways comprise four separate systems. These are the Trans-Australian Railway, operating partly in Western Australia and partly in South Australia; the Central Australia Railway, partly in South Australia and partly in the Northern Territory; the North Australia Railway, wholly in the Northern Territory; and the Australian Capital Territory Railway.

Construction of the Trans-Australian Railway was begun at Port Augusta, the original South Australian terminus of the line, in 1912 and work was completed in 1917. Of the total length of 1,108 miles between Kalgoorlie and Port Pirie (South Australia), 454 miles are in Western Australia. Although statistical details of activities on each of the four systems are available, it is not possible to give separate particulars of the operations in Western Australia of the Trans-Australian Railway. Some statistics relating to the Commonwealth Railways are shown in the next table.

Operations of Government Railways in Australia

The following table gives a summary of operations during the year ended 30 June 1972 on each of the railway systems owned by the State and Australian Governments.

GOVERNMENT RAILWAYS IN AUSTRALIA—SUMMARY OF OPERATIONS, 1971-72

Railway system of—	Route mileage at 30 June	Revenue train miles run	Passenger-journeys	Goods and livestock carried	Gross earnings	Average number of employees (a)
New South Wales	6,061	38,013	208,500	31,800 tons	\$266,268	43,411
Victoria	4,154	20,614	137,794	11,609	112,685	(b) 25,970
Queensland	5,940	18,122	31,946	18,963	124,782	22,697
South Australia	2,413	6,225	13,433	5,919	35,386	8,794
Western Australia	3,800	7,711	11,150	13,648	63,634	(b) 9,992
Tasmania	500	1,098	785	1,278	6,123	2,066
Commonwealth—						
Trans-Australian	1,108	2,511	131	1,010	19,408	2,197
Central Australia	757	945	23	1,761	7,232	1,366
North Australia	317	263	1	1,000	2,308	314
Australian Capital Territory	5	17	53	283	259	51
Australia	25,055	95,519	403,816	87,271	638,086	116,858

(a) Excluding construction staff except for Victoria and Western Australia where construction staff are included. (b) See footnote (a).

It will be noted that particulars of route miles shown for the New South Wales and Victorian systems differ from the details given for those States in the table in the next section *Railway Gauges*, which is compiled according to the State or Territory in which the several lengths of line are situated. The Victorian system includes lines extending into New South Wales, the aggregate length of such lines in New South Wales being 204 miles.

Railway Gauges

The following table shows the route mileage of government railways of each gauge in each of the Australian States and Territories at 30 June 1972. Except where otherwise indicated, the mileages shown relate to lines owned by the several State railway authorities.

GOVERNMENT RAILWAYS IN EACH STATE AND TERRITORY OF AUSTRALIA ROUTE MILEAGE OPEN AT 30 JUNE 1972

State or Territory	Route miles of gauge—					Total route miles
	5 ft 3 in	4 ft 8½ in	3 ft 6 in	2 ft 6 in	2 ft 0 in	
State systems in—						
New South Wales	(a) 204	(b) 6,090	....	....	....	6,294
Victoria	(c) 3,739	202	....	9	....	3,950
Queensland	....	69	5,841	....	30	5,940
South Australia	1,570	217	597	....	....	2,384
Western Australia	....	450	(d) 3,350	....	....	3,800
Tasmania	....	....	500	....	....	500
Commonwealth systems in—						
South Australia	....	871	367	....	....	1,238
Western Australia	....	454	....	....	....	454
Northern Territory	....	....	490	....	....	490
Australian Capital Territory	....	5	....	....	....	5
Total route miles	5,513	8,358	11,145	9	30	25,055

(a) Part of the Victorian railway system. (b) Includes 29 miles of 4 ft 8½ in line from Broken Hill to Cockburn owned and operated by the South Australian Government Railways. (c) Excludes 202 miles of 5 ft 3 in gauge line which almost parallels the 4 ft 8½ in gauge line between Melbourne and the Murray River. (d) Excludes 75 miles of 4 ft 8½ in / 3 ft 6 in dual gauge line which is included in the 4 ft 8½ in gauge line.

Standardisation of gauges on main trunk routes throughout Australia and on some other lines has been the subject of inquiries by the Australian Government and of agreements between the Commonwealth and some States. The principle of standardisation was accepted at a Premiers' Conference in August 1945 following an investigation instituted by the Australian Government in March 1944 and the submission of a favourable report in March 1945. The use of the 4 ft 8½ in gauge was recommended for adoption in a unification plan, one of the projects in which was to be the construction of a line from the Port of Fremantle through Perth to Kalgoorlie. Approval was given to the making of a survey for a route, and field work began in October 1945. The work was continued until December 1947, when it was abandoned pending agreement between the Governments of the Commonwealth and the State on the provision of finance for the unification scheme. In the years immediately following the second World War it became apparent that considerable expenditure would be necessary on the rehabilitation of the Western Australian Government Railways. The urgency and the magnitude of this undertaking were such that all the Department's available resources of money, labour and materials were absorbed in the programme and, in these circumstances, works associated with the unification plan could not be contemplated but, where possible, works connected with the restoration of the 3 ft 6 in system were so designed as to make provision for later conversion to the standard gauge.

In March 1956, a committee consisting of members of the Federal Parliament was appointed to re-examine the matter of standardisation. Among its recommendations, submitted in October 1956, was the provision of the standard gauge line between Fremantle and Kalgoorlie, but no immediate action was taken to carry out this work.

During the 1960 session, the Western Australian Parliament passed the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the Company relating to the establishment of an integrated iron and steel industry at Kwinana on the coast south of Fremantle. The Act made the operation of the agreement contingent upon the passage of legislation by the State and Commonwealth Parliaments to provide for the financing, construction and completion before 31 December 1968 of a standard gauge railway between the works site at Kwinana and the terminus of the Trans-Australian Railway at Kalgoorlie. Accordingly the Commonwealth Parliament passed the *Railway Agreement (Western Australia) Act 1961* extending to the State financial assistance for the project. The State Parliament approved this agreement by the *Railway Standardisation Agreement Act, 1961* and gave authority for the construction of the railway by means of the *Railways (Standard Gauge) Construction Act, 1961*. Work on route surveys was begun in 1961 and the construction of earthworks commenced on 5 November 1962. Basic planning and all major surveys required for the project were completed during 1965. The 3 ft 6 in portion of the dual gauge route between Midland and Northam along the Avon River valley was commissioned for general and passenger traffic on 13 February 1966. In October of the same year, haulage of grain on the standard gauge railway commenced between Merredin and the Port of Fremantle and the first train load of iron ore from Koolyanobbing to Kwinana was hauled in April 1967. The standard gauge line from Kwinana to Kalgoorlie was linked with the Trans-Australian Railway to Port Pirie (South Australia) on 3 August 1968, enabling 'through' freight services to commence in November 1968.

In 1962, the opening of a new 4 ft 8½ in gauge railway between Melbourne (Victoria) and Albury, on the border between Victoria and New South Wales, completed the standard gauge link between Melbourne and South Brisbane (Queensland). Late in 1969 work was completed on the last stage of a standard gauge connection between Sydney (New South Wales) and Perth and Fremantle, through Broken Hill (New South Wales), Port Pirie (South Australia) and Kalgoorlie. The length of this route is 2,461 miles (Sydney to Perth). Regular services for freight began in January 1970, and for passengers in March 1970. The passenger service has been named 'The Indian-Pacific' after the oceans it links.

ROADS AND ROAD TRAFFIC

Work connected with road construction and maintenance and associated projects in Western Australia is undertaken by the State Government, through the Main Roads Department, and by local government authorities, comprising City Councils, Town Councils and Shire Councils.

Under the provisions of the Main Roads Act, the Main Roads Department was established in 1930 to replace the Main Roads Board originally constituted as a central road authority in 1926. The Department operates under the *Main Roads Act, 1930-1972* and is administered by a Commissioner of Main Roads responsible to the Minister for Works. The Act makes provision for public roads in the categories of 'main' roads, 'controlled-access' roads and 'developmental' roads. An additional category, that of 'important secondary' roads, is used by the Department in determining its works programme.

Main roads are those which provide communication between a large producing area, either actual or potential, and its market or nearest port or railway station; between two or more such areas; between large centres of population; or between the capital city and a large producing area or a large centre of population. Controlled-access roads are those which do not permit direct access from abutting property and may be entered or departed from only at certain selected road connections located at points which are considered to serve best the traffic for which the controlled-access road was designed. Developmental roads are those which serve to develop an area or to increase its development. Important secondary roads are those which, though originally classified as developmental, have come to be used consistently by through traffic and therefore warrant a

special allocation of funds by the Main Roads Department. The Act provides that, on the recommendation of the Commissioner, any road may be proclaimed a main road and any main road may cease to be a main road.

The construction and maintenance of main roads and controlled-access roads are the responsibility of the Main Roads Department. The Department also makes substantial financial provision for the construction and maintenance of important secondary roads and for the construction of developmental roads. The construction and maintenance of strategic roads and roads of access to Commonwealth property is undertaken by the Department for the Australian Government.

Within its own district, each local government authority is responsible for the provision and upkeep of roads other than those provided by the Main Roads Department. In addition, the local authority is required by the Main Roads Act to maintain any developmental road situated in its district.

The following table shows the length of public roads open for vehicular traffic at 30 June 1973, classified according to Statistical Division (see map of Western Australia preceding the *Index*). Included in the total are 7,652 miles of main roads, 19 miles of controlled access roads and 5,416 miles of important secondary roads.

ROADS OPEN FOR VEHICULAR TRAFFIC AT 30 JUNE 1973
MILEAGE CLASSIFIED ACCORDING TO STATISTICAL DIVISION
(Source: Main Roads Department)

Statistical Division	Formed roads				Unformed roads (b)	Grand total
	Sealed	Gravel surface	Formed only (a)	Total		
Perth Statistical Division	4,133	453	97	4,683	1,678	6,361
Other Divisions—						
South-West	2,554	2,329	1,543	6,425	12,633	19,058
Southern Agricultural	2,087	2,861	4,390	9,339	1,859	11,198
Central Agricultural	3,767	5,316	6,162	15,245	2,831	18,076
Northern Agricultural	2,406	3,935	3,262	9,603	2,252	11,855
Eastern Goldfields	1,719	2,325	3,102	7,146	5,326	12,472
Central	352	431	3,988	4,771	3,070	7,841
North-West and Pilbara	837	556	3,342	4,735	3,953	8,688
Kimberley	579	757	1,326	2,662	2,057	4,719
Total	14,301	18,511	27,114	59,926	33,982	93,908
WESTERN AUSTRALIA	18,434	18,964	27,212	64,610	35,660	100,269

(a) Comprises roads, mainly of natural surfaces, formed but not metalled or otherwise prepared, except for certain clearing, used for vehicular traffic.

(b) Roads, unprepared

Vehicle Registration, Licences and Traffic Control

The *Traffic Act, 1919-1973* provides for the registration of vehicles, the issue of licences and the regulation of traffic throughout the State, and prescribes the fees payable in respect of the several types of licences required.

In Western Australia there is no single authority responsible for the licensing of vehicles. The Traffic Branch of the Police Department formerly licensed vehicles in the Metropolitan Traffic Area and in certain country districts in accordance with the provisions of the *Traffic Act Amendment Act (No. 2), 1969*; see further reference on page 447. At 31 December 1973 the Metropolitan Traffic Area comprised the Cities of Perth, Fremantle, Melville, Nedlands, South Perth, Stirling and Subiaco; the Towns of Canning, Claremont, Cockburn, Cottesloe, East Fremantle, Gosnells, and Mosman Park; the Shires of Armadale-Kelmscott, Bassendean, Bayswater, Belmont, Kwinana, Peppermint Grove, Rockingham and Serpentine-Jarrahdale; and parts of the Shires of Mundaring and Swan. Outside these areas of Police responsibility for vehicle licensing, each local government authority licenses vehicles in its own district.

The Traffic Act also provided that the issue of motor vehicle drivers' licences and used car dealers' licences throughout the State should be the function of the Police Department.

Under the provisions of the *Acts Amendment (Road Safety and Traffic) Act, 1973*, however, the functions of the licensing of motor vehicles, the licensing of drivers of motor vehicles and the licensing of used car dealers have now been vested in the Department of Motor Vehicles.

The following table shows the number of motor vehicles, classified according to type, on register in the Perth Statistical Division (see map preceding the *Index*) and in the whole of Western Australia from 1963 to 1972. Vehicles owned by the Australian Government are not licensed under the Traffic Act but are included in the figures. The table also gives the estimated number of vehicles per 1,000 of population and the number of persons per vehicle.

MOTOR VEHICLES ON REGISTER (a) AND RATIO TO POPULATION

At 31 December—	Motor cars and station wagons	Light and heavy commercials, omnibuses	Motor cycles and scooters	Total	Estimated number of vehicles per 1,000 of population		Estimated number of persons per vehicle	
					Motor cars and station wagons	All motor vehicles (a)	Motor cars and station wagons	All motor vehicles (a)
	('000)	('000)	('000)	('000)				
PERTH STATISTICAL DIVISION								
1963	124.4	31.2	8.0	163.6	240	316	4.2	3.2
1964	132.9	31.6	6.8	171.3	249	321	4.0	3.1
1965	141.9	32.9	6.1	180.9	258	328	3.9	3.0
1966	158.1	36.1	6.1	200.3	276	350	3.6	2.9
1967	171.7	38.2	6.2	216.1	287	361	3.5	2.8
1968	189.9	41.5	6.4	237.8	302	378	3.3	2.6
1969	211.0	45.1	7.0	263.1	320	399	3.1	2.5
1970	230.0	49.3	7.5	286.8	333	416	3.0	2.4
1971	251.0	52.5	8.8	312.3	352	437	2.8	2.3
1972	265.2	55.5	10.9	331.6	361	451	2.8	2.2
WESTERN AUSTRALIA (b)								
1963	179.3	77.4	10.9	267.6	224	335	4.5	3.0
1964	191.7	77.9	9.4	279.0	234	341	4.3	2.9
1965	204.5	81.7	8.5	294.7	244	352	4.1	2.8
1966	223.7	85.3	8.4	317.4	259	367	3.9	2.7
1967	241.4	89.3	8.7	339.4	269	378	3.7	2.6
1968	263.6	93.2	9.3	366.1	281	390	3.6	2.6
1969	289.7	98.2	10.2	398.1	297	408	3.4	2.5
1970	311.8	100.2	11.2	423.2	307	417	3.3	2.4
1971	336.6	103.8	13.1	453.5	321	432	3.1	2.3
1972	355.1	107.3	16.2	478.7	333	449	3.0	2.2

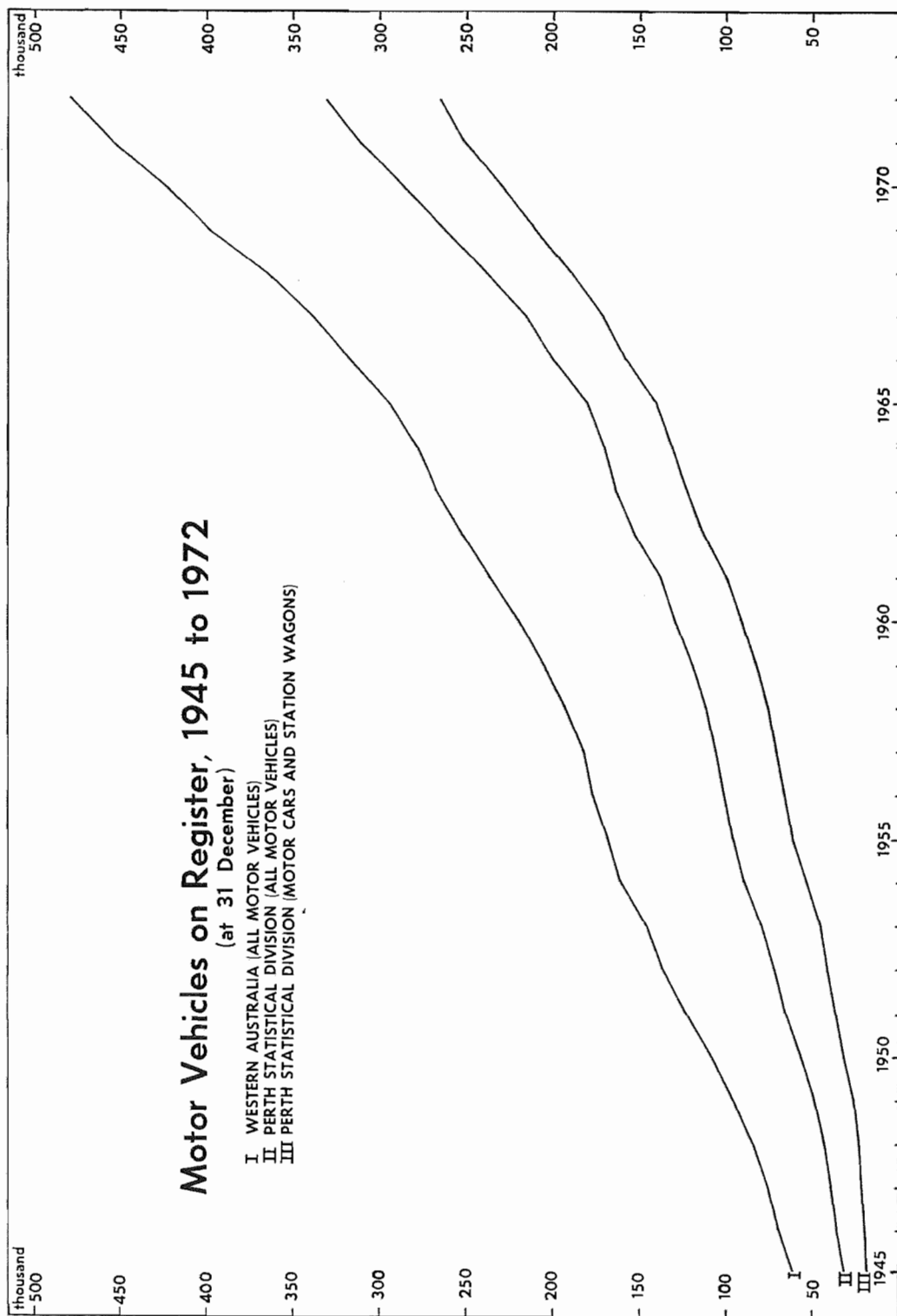
(a) Excluding tractors, trailers, caravans, and plant and equipment such as bulldozers, road graders and rollers, and mobile cranes.

(b) Includes Australian Government-owned vehicles (other than those of the defence services) listed with the Commonwealth Motor Vehicle Registry, Canberra. At 31 December 1972 there were in Western Australia 2,492 such vehicles comprising 267 motor cars, 470 station wagons, 585 light commercials, 1,032 heavy commercials, 35 omnibuses and 103 motor cycles.

Traffic control in general (except for certain powers in relation to the parking of vehicles) is exercised by the Police Department in the Metropolitan Traffic Area and in other areas for which traffic control powers have been conferred on the Commissioner of Police. Outside these Police-controlled areas, control is vested by the Traffic Act in the local government authorities.

Section 231 of the *Local Government Act, 1960-1973* authorises local authorities to make by-laws in relation to the parking of vehicles and, in the case of the Perth City Council, certain powers in this regard are granted in terms of the *City of Perth Parking Facilities Act, 1956-1970*.

In June 1965, a Departmental Committee was appointed by the State Government to investigate country traffic control, and to consider and report upon the necessity for the establishment of a single traffic authority throughout the State responsible for traffic control only; licensing of vehicles only; or both functions.



The majority of the committee, in a report which was presented in April 1966, recommended that 'the Police Department be established as the sole authority responsible for the enforcement of the Traffic Act throughout the State'. A further majority recommendation was to the effect that 'licensing of vehicles throughout the State be made the responsibility of a single authority and that the Commissioner of Police is the appropriate authority to assume this responsibility'. Although the recommendations were not adopted by the Government, it was decided that a local authority exercising vehicle licensing and traffic control powers in any territory outside the Metropolitan Traffic Area might voluntarily transfer these powers to the Police Department. Legislative authority for any such transfer is contained in the *Traffic Act Amendment Act (No. 2)*, 1969 which provided that if a local authority, by resolution of its Council, so requires, the Minister may, by notice in the *Government Gazette*, confer on the Commissioner of Police all the powers and duties imposed on the local authority by the Traffic Act, other than those relating to road construction. The Shire Councils of Broome and West Kimberley were the first local government authorities to avail themselves of this provision, and the transfer of powers became effective from 1 January 1969. Other Shires which voluntarily transferred vehicle licensing and traffic control powers to the Police Department were Serpentine-Jarrahdale (1 January 1970), Esperance, Manjimup and Ravensthorpe (1 October 1970), Merredin (1 December 1970), Busselton (1 April 1971), Ashburton (now West Pilbara), Lake Grace, Murray and Wyndham-East Kimberley (1 July 1971), Marble Bar and Nullagine (now East Pilbara), Roebourne, and Tableland (now West Pilbara) (1 July 1972), Kondinin (1 August 1972), Northam (Town) and Port Hedland (1 October 1972), Coolgardie (1 January 1973), Halls Creek (1 April 1973), Laverton, Leonora, Menzies and Wiluna (1 July 1973), and Tambellup (1 October 1973).

While traffic control in these areas remains a Police responsibility, licensing of motor vehicles has been vested in the Department of Motor Vehicles under the provisions of the *Acts Amendment (Road Safety and Traffic) Act, 1973*.

Finance for Roads

The principal source of revenue for road works in Western Australia is in the form of Australian Government financial assistance authorised by a series of Acts, the first of which, the Main Roads Development Act, was passed in 1923. The legislation currently in operation for the provision of grants to the States for or in connection with roads is the *Commonwealth Aid Roads Act 1969*.

The *Commonwealth Aid Roads Act 1969* authorises the Commonwealth to grant an amount of \$1,252.05 million as financial assistance to the States in relation to roads during the five-year period from 1 July 1969 to 30 June 1974. The assistance comprises a 'principal grant' of \$1,200 million and a 'supplementary grant' of \$52.05 million. The principal grant is apportioned among the six States and must be spent on specified classes of roads and on road planning and research. Moneys are provided from the supplementary grant to the States of Western Australia, South Australia and Tasmania, and are available for the construction and maintenance of roads generally. The annual amounts payable from the principal grant increase from \$180 million in 1969-70 to \$310 million in 1973-74, while those payable from the supplementary grant decrease from \$13.0 million to \$6.80 million.

Western Australia's share of the principal grant of \$1,200 million is \$159.6 million, of which \$62.41 million is required to be spent on the construction of urban arterial roads, \$23.91 million on the construction of rural arterial roads, \$70.88 million on the construction and maintenance of other rural roads, and \$2.40 million on road planning and research. Western Australia's share of the supplementary grant of \$52.05 million is \$40.80 million.

Payment of moneys provided by the *Commonwealth Aid Roads Act 1969* is contingent on a State's expenditure on roads from its own resources. To qualify for the full amount of the grant a State must increase its annual expenditure on roads in proportion to the increase in the number of motor vehicles on the register in that State.

The *Traffic Act Amendment Act (No. 2), 1969* and the *Main Roads Act Amendment Act, 1969*, both of which came into operation on 1 July 1969, established a new system for the receipt and disbursement of moneys to be spent on roads. Other Western Australian Acts which provide revenue for road purposes are the *Road Maintenance (Contribution) Act, 1965-1972* (see page 271) and the *Transport Commission Act, 1966-1973* (see pages 271 and 455).

The *Traffic Act, 1919-1973* requires that there shall be paid to the Main Roads Trust Account, maintained under the Main Roads Act, the motor vehicle licence fees received by local government authorities, or by the Director of the Department of Motor Vehicles as the licensing authority in the Metropolitan Traffic Area and other areas for which vehicle licensing powers have been conferred on the Director. Provision is made for the retention by these authorities of specified amounts to cover costs of administration in respect of motor vehicle licensing. The Director of the Department of Motor Vehicles is also required to pay into the Account one-half of the fees which he receives on the issue or renewal of drivers' licences.

The *Main Roads Act Amendment Act, 1969* provides that there shall be paid to the Main Roads Trust Account moneys received from the Australian Government as financial assistance in relation to roads; amounts payable under the provisions of the Traffic Act or any other Act; moneys appropriated by the Parliament; and payments by local government authorities in respect of permanent works and the maintenance of main roads and developmental roads. Moneys standing to the credit of the Account are used to meet expenditure by the Commissioner of Main Roads on the administration of the Act and the construction of roads and associated works, and to provide funds to local government authorities for roads and road works.

The Act provides that every local government authority shall be paid from the Main Roads Trust Account an annual grant calculated by applying a percentage increase to a 'base grant' specified for each authority. An additional grant is payable to any local government authority whose annual expenditure on road construction from its own resources exceeds a prescribed amount. The Act requires that one-half of the moneys received by a local authority in the form of grants shall be spent on the construction of urban arterial roads where its district is within the Perth Statistical Division, and on the construction of rural roads other than arterial rural roads where its district is outside the Division. The remaining moneys are to be applied to the construction and maintenance of roads generally.

Grants payable from the Main Roads Trust Account constitute the principal revenue available to local government authorities for road construction and maintenance. Other moneys may be provided from the ordinary revenue of a local authority or from loans raised for road purposes.

Beef Cattle Roads. In addition to grants made under the Commonwealth Aid Roads legislation, the Australian Government provided financial assistance, during the six-year period ended 30 June 1967, in terms of a series of Western Australia Grant (Beef Cattle Roads) Acts, the first of which was passed in 1961. The aim of this assistance was to improve the standard of roads used for the transport of beef cattle in the Kimberley. During the period of the programme almost \$17 million was spent, the State Government matching Commonwealth contributions on a dollar for dollar basis. An extension of Commonwealth financial assistance is authorised by the *States Grants (Beef Cattle Roads) Act 1968*. The Act provides for a contribution of up to \$9.5 million as Western Australia's share of funds for a further programme of construction during a period of seven years commencing on 1 July 1967. The grants are again conditional upon equal expenditure by the State and by 30 June 1973 had totalled \$8.5 million.

ROAD PASSENGER TRANSPORT SERVICES

Motor omnibus services (as well as a passenger ferry service) in the metropolitan area are operated by the Metropolitan (Perth) Passenger Transport Trust, constituted under the *Metropolitan (Perth) Passenger Transport Trust Act, 1957-1973*. For the purposes of

the Act, the metropolitan area is defined by a proclamation of 1 May 1958 as being 'all the land within a circle having a radius of 30 miles from the Perth Town Hall' and in addition, an area bounded by the South Western Highway and the ocean, extending southward to an east-west line one mile south of the town of Pinjarra. The trolley-bus services formerly operated by the Trust were discontinued on 29 August 1969.

Road transport of passengers outside the metropolitan area is provided by the railways road services (see page 439), which cover long-distance routes between Perth and country centres and by The Eastern Goldfields Transport Board, which serves the Kalgoorlie-Boulder urban area under an agreement with the Kalgoorlie and Boulder local government authorities. In addition, at 30 June 1972 thirty-four private operators, employing 203 buses, were licensed to provide tourist, town, area and charter services.

In certain country areas, children are taken to and from school by motor bus at government expense. In 1971-72 the cost to the Government of school transport services was \$3,683,493. The number of omnibuses engaged was 703. They travelled a daily total of 48,494 miles and carried 22,927 children daily.

Details of the operations of government and municipal omnibus services in Western Australia during the five years ended 30 June 1972 are given in the following table.

OMNIBUS SERVICES (a)

Year	Route miles operated (b)	Omnibuses at end of year	Omnibus miles run '000	Passenger-journeys '000	Employees at end of year	Operating revenues (c) \$'000	Operating expenses \$'000	Depreciation \$'000	Interest \$'000
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METROPOLITAN (PERTH) PASSENGER TRANSPORT TRUST (d)(e)

1967-68	642	681	19,031	52,929	1,753	7,012	6,734	630	452
1968-69	628	688	19,736	54,713	1,737	7,205	7,320	626	463
1969-70	633	688	20,919	55,804	1,752	7,918	8,011	636	505
1970-71	748	726	22,021	57,181	1,795	8,410	9,352	664	553
1971-72	770	747	22,742	59,356	1,853	8,553	10,885	712	574

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

1967-68	3,958	61	1,875	228	142	549	610	76	34
1968-69	4,045	63	1,958	234	145	596	635	104	66
1969-70	4,119	63	1,930	222	148	613	654	114	73
1970-71	4,044	52	1,867	207	148	645	712	123	83
1971-72	4,095	57	1,772	180	148	623	756	124	75

THE EASTERN GOLDFIELDS TRANSPORT BOARD

1967-68	14	15	232	734	18	69	78	9	(f)
1968-69	14	19	275	791	19	84	82	11	(f)
1969-70	14	21	421	899	19	118	126	13	1
1970-71	14	17	503	667	21	130	138	15	....
1971-72	14	19	420	664	21	133	132	15	....

(a) Excludes tourist services. (b) Excludes school bus routes. (c) Passenger fares and subsidies only. (d) For passenger ferry operations, see page 452. (e) Includes operations of trolley-buses until 29 August 1969 when the service was discontinued. (f) Less than \$500.

MOTOR VEHICLE USAGE

The most recent information on the usage of motor vehicles was that obtained by means of a sample survey conducted throughout Australia by the Australian Bureau of Statistics in relation to the twelve months ended 30 September 1971.

The sample for the whole survey comprised approximately 51,000 vehicles and some 800 bus fleets. Excluding buses, approximately 80 per cent of the sampled vehicles were trucks and other commercial types, this preponderance being necessitated by the diversity of the truck sector.

Because the survey results are based on a sample, representing some 5.1 million vehicles on register at 30 September 1971, they are subject to sampling variability when compared with results which would have been obtained from a complete census of all registered motor vehicles using the same questionnaires and procedures.

In Western Australia, the survey disclosed an average annual mileage of 10,500 for all vehicles, except buses. Buses averaged 20,800 miles, cars and station wagons 10,200, while articulated trucks with carrying capacity of sixteen tons and over averaged 44,000 miles.

Detailed information appears in the publication *Survey of Motor Vehicle Usage, twelve months ended 30 September 1971 (preliminary)*, reference number 14.4 published by the Commonwealth Statistician, Canberra.

ROAD TRAFFIC ACCIDENTS

Statistics of road traffic accidents are prepared from information concerning accidents in public thoroughfares, as reported to officers of the Police Department in the Metropolitan Traffic Area and other areas as prescribed (see page 447) and, outside those areas, to traffic inspectors employed by local government authorities and/or police officers. Accidents involving casualties are those which result in the death of any person within a period of thirty days after the accident, or in which any person suffers bodily injury to an extent requiring surgical or medical treatment.

The following table shows, for each year during the period 1968 to 1972, the number of accidents involving casualties which occurred in Western Australia and in Australia.

The number of persons injured per 10,000 motor vehicles on register was higher in Australia as a whole than in Western Australia for each of the years shown.

ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES WESTERN AUSTRALIA AND AUSTRALIA

Particulars	1968	1969	1970	1971	1972
WESTERN AUSTRALIA					
Accidents involving casualties—					
Total	4,708	4,809	5,218	5,178	4,909
Per 10,000 motor vehicles on register (a)	133	126	127	118	105
Per 100,000 of mean population (b)	514	503	525	502	465
Number of persons killed—					
Total	320	311	351	332	340
Per 10,000 motor vehicles on register (a)	9	8	8	8	7
Per 100,000 of mean population (b)	35	33	35	32	32
Number of persons injured—					
Total	6,553	6,788	7,373	7,328	6,751
Per 10,000 motor vehicles on register (a)	186	178	179	167	145
Per 100,000 of mean population (b)	716	710	742	710	639
AUSTRALIA					
Accidents involving casualties—					
Total	58,759	62,597	65,210	65,210	65,750
Per 10,000 motor vehicles on register (a)	135	136	134	127	123
Per 100,000 of mean population (b)	489	511	521	511	506
Number of persons killed—					
Total	3,382	3,502	3,798	3,590	3,422
Per 10,000 motor vehicles on register (a)	8	8	8	7	6
Per 100,000 of mean population (b)	28	29	30	28	26
Number of persons injured—					
Total	82,210	87,864	91,554	91,036	89,766
Per 10,000 motor vehicles on register (a)	189	191	188	177	168
Per 100,000 of mean population (b)	684	717	732	714	691

(a) Figures revised in accordance with final results of the census of motor vehicles on register at 30 September 1971. (b) Based on final results of the Population Census of 30 June 1971.

In the next table road traffic accident casualties which occurred in Western Australia during the five years ended 31 December 1972 are classified according to type of road user. The figures shown in the category 'Other' refer to such persons as bystanders, train drivers, riders of horses and drivers of animal-drawn vehicles.

ROAD TRAFFIC ACCIDENTS—CASUALTIES ACCORDING TO TYPE OF ROAD USER

Type of road user	1968	1969	1970	1971	1972
PERSONS KILLED					
Drivers of motor vehicles	143	124	137	136	129
Motor cyclists (a)	7	18	8	5	17
Pedal cyclists	8	9	4	2	4
Passengers—					
Pillion	1	3	3	2	4
Other	105	84	117	116	104
Pedestrians	56	73	74	64	77
Other ....	....	....	8	7	5
Total	320	311	351	332	340
PERSONS INJURED					
Drivers of motor vehicles	2,680	2,863	3,247	3,228	2,780
Motor cyclists (a)	328	325	361	439	541
Pedal cyclists	275	340	247	242	226
Passengers—					
Pillion	54	51	54	72	86
Other	2,431	2,468	2,752	2,664	2,420
Pedestrians	781	715	689	661	680
Other	4	26	23	22	18
Total	6,553	6,788	7,373	7,328	6,751

(a) Includes riders of motor scooters.

The following table gives a classification of casualties according to the ages of persons killed and persons injured during each year of the period from 1968 to 1972.

ROAD TRAFFIC ACCIDENTS—CASUALTIES CLASSIFIED ACCORDING TO AGE

Year	Age last birthday (years)										Total		
	0-4	5-6	7-16	17-20	21-29	30-39	40-49	50-59	60 and over	Not stated			
PERSONS KILLED													
1968	11	6	29	54	75	35	29	27	51	3	320
1969	13	6	27	56	70	35	27	21	56	....	311
1970	14	3	31	58	76	34	41	42	52	....	351
1971	10	6	34	52	72	33	29	34	62	....	332
1972	18	6	33	61	89	30	36	21	45	1	340
PERSONS INJURED													
1968	233	142	759	1,364	1,276	676	561	452	409	681	6,553
1969	261	134	867	1,383	1,293	728	608	424	501	589	6,788
1970	238	117	815	1,624	1,524	765	697	480	479	634	7,373
1971	246	116	826	1,619	1,594	785	668	470	481	523	7,328
1972	257	117	724	1,460	1,453	681	563	436	451	609	6,751

Road traffic accidents during the years ended 31 December 1971 and 1972 are classified in the next table according to nature of accident and type of vehicle involved. It should be noted that, as accidents (and casualties) may involve more than one type of vehicle and, in such cases, are classified to each type involved, it is not appropriate to derive totals by adding the figures shown in the second part of the table.

For additional information on road traffic accidents in this State, the reader is referred to the mimeographed bulletin *Road Traffic Accidents Involving Casualties* issued quarterly and annually by the Western Australian Office of the Australian Bureau of Statistics.

ROAD TRAFFIC ACCIDENTS NATURE OF ACCIDENT AND TYPE OF VEHICLE INVOLVED

Nature of accident and type of vehicle involved	1971			1972		
	Accidents involving casualties	Casualties		Accidents involving casualties	Casualties	
		Persons killed	Persons injured		Persons killed	Persons injured
NATURE OF ACCIDENT						
Vehicle colliding with—						
Moving or stationary vehicle (a)	3,021	118	4,671	2,611	102	3,918
Railway vehicle	13	3	13	12	1	24
Pedestrian	682	65	647	699	72	653
Parked vehicle	115	10	144	122	3	171
Fixed object	11	....	16	8	....	11
Animal or animal-drawn vehicle	20	1	22	20	....	37
Vehicle overturning or leaving road	1,209	125	1,690	1,320	144	1,806
Passenger accident	19	4	16	25	5	23
Other accidents	88	6	109	92	13	108
Total	5,178	332	7,328	4,909	340	6,751

TYPE OF VEHICLE INVOLVED (b)

Motor vehicle—						
Car, other than taxi	4,517	264	6,568	4,103	270	5,785
Taxi	66	....	87	78	1	101
Van; utility	848	58	1,193	870	62	1,232
Truck	292	32	376	246	23	319
Semi-trailer	61	25	73	58	6	78
Omnibus	63	4	83	58	7	77
Motor cycle, motor scooter	478	8	547	621	20	700
Other (c)	36	6	44	29	11	30
Pedal cycle	237	2	251	229	4	235

(a) Excludes parked vehicles.

(b) See letterpress immediately preceding table.

(c) Includes unidentified vehicles.

PASSENGER FERRY SERVICE

The Metropolitan (Perth) Passenger Transport Trust operates a passenger ferry service across the Swan River from Perth to South Perth. Particulars of private charter excursions, other than those which relate to operating revenues and expenses, are excluded from the figures in the following table.

PASSENGER FERRY SERVICE

Year	Ferries at end of year	Miles run (a)	Passenger-journeys (a)	Employees at end of year	Operating revenues	Operating expenses	Depreciation	Interest
1968-69	5	22,524	336,146	9	\$ 55,368	\$ 53,462	\$ 1,216	\$ 766
1969-70	5	22,328	367,643	9	70,079	58,233	3,152	5,098
1970-71	5	22,392	357,372	9	74,393	66,468	3,188	6,276
1971-72	5	22,394	370,366	9	78,018	68,130	3,479	6,066
1972-73	5	22,310	365,184	9	85,675	76,099	3,845	6,030

(a) Excludes private charter operations.

AIR TRANSPORT

The supervision and control of civil air transport throughout Australia is the responsibility of the Commonwealth Department of Transport (Air Transport Group). Its regulatory functions include the licensing of air crew, engineering staff, airlines, charter and aerial work operators, flying schools and aerodromes; the approval of fares, freight rates and timetables; and the establishment and operation of air traffic control procedures. It is also responsible for the conduct of search and rescue operations; the provision and maintenance of government aerodromes, aeronautical communication systems and radio navi-

gational aids; and the specification of required meteorological services. The Department co-operates with the State Transport Commission which has a statutory licensing function in respect of air transport facilities within the State.

An extensive system of regular air services operates in Western Australia for the transport of passengers, freight and mails. The international airport seven miles from Perth is used by international, interstate and intrastate airlines providing services to South Africa, Europe, Singapore, Hong Kong and Japan, to all Eastern States capital cities, to Darwin and to many towns throughout Western Australia.

In December 1973 there were twenty-five aerodromes owned and maintained by the Australian Government in Western Australia in addition to forty-one licensed aerodromes owned privately or by local authorities, while there were more than 500 landing strips suitable for use by light aircraft throughout the State.

At the same date there were thirty-eight centres served by regular airlines. Commuter services which originated from five of those centres served another nineteen communities.

To enable jet aircraft to operate on main trunk routes throughout the State, visual approach slope indicator lighting systems have been installed at thirteen main airports. Turbo-prop and piston engined aircraft maintain the feeder and commuter services between the smaller centres and the trunk routes.

In addition to the aircraft capacity of the airline and commuter services at December 1973 there were over 250 aircraft, based at centres throughout Western Australia, available for passenger and freight charter operations or aerial work such as aerial agriculture, aerial surveys, etc. and a further 224 aircraft in the private (*i.e.* not commercial) category.

Perth Airport, which is equipped with electronic and electrical navigation and approach aids to enable operations in periods of low visibility, handled 645,511 intrastate, interstate and overseas passengers in the twelve months ended 30 June 1973. The average annual passenger growth rate in the past ten years exceeds 14 per cent.

The Royal Flying Doctor Service operates from a number of centres and details of its activities are given in Chapter V, Part 3.

Airport Operations. The following table, compiled from information published by the Department of Civil Aviation (now Department of Transport, Air Transport Group), provides a summary of operations at principal airports in Western Australia during each of the years 1970 to 1972. The figures refer only to regular public transport operations on scheduled services by licensed airlines and do not include charter and commuter services.

CIVIL AVIATION—TRAFFIC HANDLED AND AIRCRAFT MOVEMENTS
AT PRINCIPAL AIRPORTS

Airport	Passengers (a)			Freight (short tons) (b)			Aircraft movements (c)		
	1970	1971	1972	1970	1971	1972	1970	1971	1972
Broome	8,333	10,691	11,255	244	246	224	1,562	1,576	1,685
Carnarvon	10,112	13,647	11,905	138	140	105	1,558	1,656	1,250
Derby	21,707	16,025	16,334	1,231	1,130	770	2,764	2,589	2,369
Geraldton	18,272	20,593	21,168	64	87	65	1,392	1,624	1,618
Kalgoorlie	31,521	32,193	23,557	278	303	200	1,186	1,136	636
Karratha (d)	27,843	65,986	60,872	457	910	783	1,815	2,921	2,576
Kununurra	12,279	15,294	15,218	405	475	427	1,660	1,749	1,627
Learmonth	6,245	7,728	8,067	95	220	117	1,413	1,042	779
Newman	15,037	22,100	12,808	210	322	188	1,340	1,791	1,582
Perth— Paraburdoo	(e)	24,019	19,022	(e)	317	286	(e)	1,963	1,733
Internal (f)	467,469	541,412	524,258	9,090	10,040	9,183	10,561	11,985	10,447
International	69,235	84,133	105,000	933	1,243	1,328	2,601	3,107	3,148
Port Hedland	48,260	51,804	44,312	1,754	1,829	1,263	4,407	4,135	3,324
Tom Price	13,859	15,371	8,389	253	184	112	1,014	1,578	1,282

(a) Total of embarkations and disembarkations.

(b) Total of freight loaded and unloaded. Short ton = 2,000 lb.

(c) Total of arrivals and departures.

(d) Formerly Dampier.

(e) Commenced regular transport operations 1 August

1971.

(f) Interstate and intrastate.

Casualty Accidents. The following table shows the number of accidents involving civil aircraft which resulted in death or serious injury. The statistics relate to the following classes of operation: regular public transport; charter flights; aerial agriculture; training; other aerial work; private; and gliding.

CIVIL AVIATION—ACCIDENTS INVOLVING CASUALTIES (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
WESTERN AUSTRALIA					
Number of—					
Accidents (a)	3	6	6	3	3
Persons killed	(b) 29	2	10	7	2
Persons seriously injured	2	9	3	....	1
AUSTRALIA					
Number of—					
Accidents (a)	17	46	31	28	30
Persons killed	(b) 47	49	48	37	41
Persons seriously injured	20	40	24	23	8

(a) Accidents involving civil aircraft which resulted in death or serious injury. Excludes parachutists killed on contact with earth after an uninterrupted fall. Excludes accidents outside Australia involving aircraft on the Australian register. (b) Includes 26 persons killed in one accident which occurred on 31 December 1968.

TRANSPORT CO-ORDINATION

State Transport Co-ordination Act

The *State Transport Co-ordination Act, 1966*, which came into operation on 19 June 1967, repeals the *State Transport Co-ordination Act, 1933-1961*. The Act provides for the appointment of a Director General of Transport, a Transport Advisory Council and a Transport Users' Board.

The duties of the Director General are to recommend to the Minister transport policy or changes in transport policy and measures for achieving policy objectives and the co-ordination of the various forms of transport service; to implement such policies and measures; to provide for research in transport planning and operation and in the economics of every form of transport; to co-ordinate capital works programmes for public transport services; to inquire into existing transport services; to recommend the provision of road transport services; to examine and report on any proposal for the construction of a new railway; to recommend the closure or partial suspension of any transport service, including a railway; and to advise the Minister on the administration of specified Acts relating to transport.

The Transport Advisory Council comprises the Director General of Transport (as Chairman), the Commissioner of Railways, the Commissioner of Main Roads, the Commissioner of Transport, the Chairman of the Metropolitan (Perth) Passenger Transport Trust, the Chairman of the Western Australian Coastal Shipping Commission, a representative of the West Australian Road Transport Association, and a representative of operators of regular air transport services. The duties of the Council are to formulate proposals in respect of, and make recommendations on, any matter referred to it by the Minister or the Director General of Transport, or that it may bring forward of its own motion.

The Transport Users' Board consists of the Director General of Transport (as Chairman) and four persons appointed by the Governor on the nomination of the Minister. These four members must be persons who, in the opinion of the Minister, are capable of assessing the financial and economic effect on transport users of any proposed or existing transport policy, two of them being persons particularly versed in the transport needs of rural industries. The Transport Users' Board is charged with the duty of considering and, where it so resolves, of making recommendations on, any matter affecting a transport service operating in the State, or concerning the lack or inadequacy of a transport service.

Transport Commission Act

The *Transport Commission Act, 1966-1973* provides for the appointment of a Commissioner of Transport. Under the direction of the Minister, the Commissioner is required to call tenders for the provision of road transport where, in the opinion of the Minister, the requirements of a district are not adequately served by any form of transport; to administer and direct the payment of such subsidies with respect to the provision of transport as may be authorised pursuant to the Act; and to consider and determine all applications for licences in respect of public vehicles. In regard to such licences the Commissioner may specify any particular conditions concerning the granting or holding of a licence, and may determine, in respect of any particular licence or group of licences, the conditions that shall be imposed on the granting and holding of such licences.

The public vehicles licensed by the Commissioner are omnibuses (other than those operated by the Metropolitan (Perth) Passenger Transport Trust), commercial goods vehicles, and aircraft.

In the licensing of omnibuses the Commissioner is empowered to prescribe the routes to be operated, the stopping places at which passengers may be picked up or set down, the fares to be charged, the timetables to be observed and the maximum number of passengers to be carried at any one time on any vehicle. The Commissioner may impose such other conditions as he thinks proper in the public interest.

All commercial goods vehicles operating on public roads are required to be licensed, except those which operate solely in the area within a radius of twenty miles from the General Post Office, Perth, or within a radius of twenty miles from the owner's place of business (or, where such place of business is situated more than forty miles from the General Post Office, Perth, within a radius of twenty-five miles). Exemptions from licensing provisions also apply to vehicles used for the transport of specified types of goods, mainly primary produce including forest products, minerals and livestock, or for the transport of goods within particular areas or between particular points.

Aircraft licences issued by the Commissioner relate to regular services and charter flights. Aircraft exempted from the licensing provisions of the Act are those operated solely in connection with the Royal Flying Doctor Service or in the course of aerial spraying, crop dusting, seed sowing, fertiliser distribution, photography, geophysical surveying, dingo baiting or whale or fish spotting.

The *Road and Air Transport Commission Act Amendment Act, 1970* widens the scope of the original Act to include control of the operations of ships engaged in the coasting trade. Under the provisions of the 1970 legislation, ships other than those operated by the Western Australian Coastal Shipping Commission may not engage in the coasting trade unless authorised to do so by a licence or permit granted by the Commissioner of Transport.

Financial transactions are recorded in a Transport Commission Fund account as required by the Act. The principal revenues of the Fund are receipts from licence and permit fees and amounts received from the Treasury for distribution in the form of subsidy to transport operators and others in certain areas. The expenditure from the Fund includes amounts necessary to meet administration costs, disbursements to the Main Roads Department and to local government authorities for the maintenance and improvement of roads, moneys required to be held in trust for the provision and maintenance of landing grounds, and the payment of subsidies. Subsidies are paid principally on the cartage of grain and fertilisers, but also on the air transport of perishable goods to remote parts of the State and on travel, mainly by air, by students normally resident in those areas.

Taxi-cars (Co-ordination and Control) Act

The *Taxi-cars (Co-ordination and Control) Act, 1963-1973* constitutes a Taxi Control Board of seven members to provide for the co-ordination and control of taxi-cars and the registration and conduct of taxi-car drivers in the Metropolitan Traffic Area and such other areas as may be declared. The Act provides that the Board shall consist

of the Commissioner of Transport (as Chairman); a member of the police force appointed by the Commissioner of Police; and five persons, appointed by the Governor, comprising one to represent the interests of local authorities, chosen from a panel of names that is obtained by each local authority submitting the name of one person; one nominated by the W.A. Taxi Operators' Association; one taxi-car owner and one full-time taxi-car driver, each of whom shall be elected by taxi-car owners and operators; and one nominated by the Metropolitan (Perth) Passenger Transport Trust.

The principal functions of the Board are the formulation of schemes for the co-ordination and control of taxis; the determination of the number and kind of taxis to be licensed; the issue of licences; the determination of fares and other charges; the supervision of the operation of taxis and the regulation of stands; the registration of, and the control of the conduct and dress of, drivers; and the enforcement of regulations made under the Act.

It is provided that the number of taxis that may be licensed to operate within the Metropolitan Traffic Area shall not at any time exceed one for every 800 of the population of the area.

The Act establishes a Taxi Control Fund for the receipt of fees payable on the issue, renewal or transfer of licences. The expenses of the administration of the Act are paid from the Fund.

Chapter IX—continued

Part 4—Communication

POSTS, TELEGRAPHS AND TELEPHONES

The first postmasters in the Colony of Western Australia were appointed at Perth and Fremantle in 1830 and a Postal Department was established by the Colonial Government in 1834. Telegraphic communication, between Perth and Fremantle, was inaugurated in 1869 by means of a private line, which was purchased by the Government in 1871. A telephone exchange system, installed and operated by the Government, was opened at Perth in 1887.

In 1901, following the federation of the Australian Colonies, the post, telegraph and telephone services of the State Governments were transferred to the Commonwealth Government. The Post and Telegraph Act of 1901 placed the services under the control of a Commonwealth Minister to be known as the Postmaster-General.

The following table shows the number of persons employed by the Postmaster-General's Department in Western Australia, and the number of post offices and telephone offices throughout the State at 30 June in each year from 1969 to 1973. Full-time employees are those directly under the control of the Department. The remainder, shown as 'Other employees', provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed. 'Non-official' post offices are conducted by persons who are not members of the Australian Public Service, and are frequently operated in conjunction with some other business activity. 'Telephone offices' are those where trunk-line calls and local calls may be made and telegrams lodged by members of the public, but which do not provide postal facilities. Multi-coin public telephones are not included.

**POSTMASTER-GENERAL'S DEPARTMENT—NUMBERS OF EMPLOYEES AND OFFICES
WESTERN AUSTRALIA**

Particulars	At 30 June—				
	1969	1970	1971	1972	1973
Full-time employees—					
Permanent officers	5,808	6,001	6,400	6,777	7,353
Temporary and exempt officers	2,156	2,678	2,767	2,530	2,275
Total	7,964	8,679	9,167	9,307	9,628
Other employees—					
Non-official postmasters and staff	482	461	444	435	431
Telephone office-keepers	183	161	161	143	139
Mail contractors (a)	323	305	338	297	261
Part-time employees	325	340	391	371	408
Total	1,313	1,267	1,334	1,246	1,239
Total, Employees	9,277	9,946	10,501	10,553	10,867
Post offices—					
Official	158	161	163	161	161
Non-official	468	445	*431	422	421
Telephone offices	181	162	159	139	141
Total, Offices	807	768	*753	722	723

(a) Includes persons employed by contractors to drive vehicles on mail runs.

* Revised.

The total number of employees of the Postmaster-General's Department for Australia as a whole at 30 June 1973 was 130,372. At the same date there were 6,534 official and non-official post offices.

Figures relating to the cash receipts and expenditure of the Department in Western Australia during each of the financial years 1968-69 to 1972-73 are given in the following table. They represent actual collections and payments in each year, as shown by records kept for Treasury purposes. Some additional items of departmental revenue and expenditure are not apportioned to States and therefore do not appear in the table. As the figures shown relate to actual collections and payments made, they do not represent the net results of the Department's operations for the year.

POSTMASTER-GENERAL'S DEPARTMENT
CASH RECEIPTS AND EXPENDITURE—WESTERN AUSTRALIA
($\$'000$)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
CASH RECEIPTS (a)					
Postal	10,698	11,567	13,577	15,716	16,547
Telephone	26,818	30,452	37,631	45,663	51,507
Telegraph	1,199	1,523	1,944	2,246	2,441
Proceeds of sales	375	493	480	326	616
Recoverable works	1,914	2,058	2,156	2,133	2,583
International services	152	223	182	314	202
Total	41,155	46,317	55,970	66,398	73,896
CASH EXPENDITURE (b)					
Salaries and wages	27,139	32,585	37,938	44,778	51,033
Material	22,390	26,203	22,465	23,591	20,019
Carriage of mails by contractors	749	781	849	916	970
Buildings, sites, properties	3,122	6,025	4,377	4,121	4,589
Accommodation services	1,805	2,026	2,195	2,454	2,613
Other administrative expenses (c)	3,343	4,224	4,532	4,783	5,361
Total	58,547	71,844	72,356	80,643	84,584

(a) Actual collections during the year as taken from the cash records of the Department. (b) Actual payments made during the year for all Departmental purposes. (c) Major items within this classification are travelling allowances, repairs to plant, engineering contract works and hire of vehicles.

The annual net results of the operations throughout Australia of each service, for the three years ended 30 June 1973 after providing for working expenses (including depreciation, superannuation and furlough liability) and interest charges are shown in the following table. The amounts appearing under the heading of *Interest* represent interest on funds provided by the Treasury.

POSTMASTER-GENERAL'S DEPARTMENT—PROFIT OR LOSS (a) OF SERVICES
AUSTRALIA
($\$'000$)

Particulars	1970-71			1971-72			1972-73		
	Postal	Tele-communications	All services	Postal	Tele-communications	All services	Postal	Tele-communications	All services
Earnings	185,599	530,014	715,613	213,364	645,129	858,493	226,496	710,565	937,061
Working expenses	199,816	403,077	602,893	210,850	456,470	667,319	231,786	517,471	749,256
Profit or loss before charging interest	—14,217	126,937	112,720	2,514	188,659	191,173	—5,289	193,094	187,804
Interest	11,272	103,091	114,363	13,767	117,607	131,374	15,602	130,979	146,581
Profit or loss after charging interest	—25,489	23,846	—1,643	—11,253	71,052	59,799	—20,891	62,115	41,223

(a) Minus sign (—) denotes loss.

Posts

In the following table, postal matter handled in Western Australia during each year from 1968-69 to 1972-73 is dissected according to the type of article dealt with, and whether received from overseas or posted for delivery in Australia or to an overseas destination.

POSTAL ARTICLES HANDLED (a)
(Thousands)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Posted for delivery within Australia—					
Ordinary postal articles—					
Letter-form	153,580	159,151	158,178	154,859	162,275
Other	13,753	14,104	13,719	12,993	12,757
Parcels (b)	1,039	1,381	1,417	1,193	1,245
Registered articles (c)	687	751	718	626	520
Posted for delivery overseas—					
Ordinary postal articles—					
Letter-form	8,218	9,165	9,724	10,124	10,319
Other	985	1,009	878	742	788
Parcels (b)	40	53	46	80	68
Registered articles (c)	84	96	110	103	93
Received from overseas—					
Ordinary postal articles—					
Letter-form	5,118	5,679	7,036	7,153	6,860
Other	6,204	3,344	2,931	3,084	2,827
Parcels (b)	119	133	137	150	168
Registered articles (c)	56	67	65	75	77

(a) Excludes matter received from other Australian States.
(c) Excludes registered parcels; see footnote (b).

(b) Includes registered, cash on delivery and duty parcels.

Telegraphs and Telephones

The next two tables relate to telegraph and telephone services in Western Australia in each financial year from 1968-69 to 1972-73. Telegrams can be lodged at any post office, telephone office or from any public telephone equipped for multi-coin operation. In addition, telegrams can be despatched from any subscriber's telephone or teleprinter exchange (telex) equipment. The number of telegraph offices in the State and of telegrams transmitted from Western Australia during the years 1968-69 to 1972-73 are set out below.

Telephone services comprise ordinary exchange services (*i.e.* those which provide direct access to the exchange system by means of exclusive use of an exchange line), duplex services, party-line services, private branch exchange services and public telephones. The numbers shown as 'Telephone instruments in service' relate to those through which direct access to the exchange system may be obtained.

At 30 June 1973, the pair length of conductors in telegraph and telephone cables in Western Australia was 2,040,307 kilometres. The pair length of aerial wires was 87,714 kilometres and the length of pole routes was 26,072. There were 8,460 tube kilometres of coaxial cable.

The teleprinter exchange service (telex) was introduced in Perth in December 1956. This service enables a subscriber's teleprinter to be connected with that of any other subscriber in the local network or networks in other States. Details of the number of services and internal calls for the five years ended 30 June 1973 appear on page 460.

TELEGRAPHS

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of—					
Offices (a)	807	768	*753	722	723
Telegrams—					
Within Australia—Dispatched	'000 2,516	'000 2,487	'000 2,259	'000 2,113	'000 2,058
Beyond Australia—Dispatched	152	188	181	176	164

(a) At 30 June.

* Revised.

TELEPHONES AND EXCHANGES (a)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of—					
Exchanges	749	746	744	747	744
Services—					
Metropolitan (b)	112,510	127,199	136,810	143,866	153,611
Other	53,181	58,857	62,748	66,765	71,929
Total	165,691	186,056	199,558	210,631	225,540
Telephone instruments in service—					
Total	231,845	256,303	285,480	304,044	325,851
Per 100 of population	24.3	25.9	27.7	28.9	30.3

(a) At 30 June.

(b) Services connected to exchanges located within 10 miles of the General Post Office, Perth.

TELEPRINTER EXCHANGE NETWORK (TELEX)

Particulars	1968-69	1969-70	1970-71	1971-72	1972-73
Number of—					
Services at 30 June	477	686	887	1,023	1,171
Internal calls (a)	932,049	1,319,886	1,673,421	2,079,802	2,256,590

(a) Includes Post Office official traffic.

RADIOCOMMUNICATION

The Overseas Telecommunications Commission (Australia) is the authority responsible for the operation of telecommunication services between Australia and other countries, with ships at sea and to and between Australia's external Territories.

The Commission was established under the provisions of the *Overseas Telecommunications Act* 1946 which implemented a recommendation of the 1945 Commonwealth Telecommunications Conference for national ownership of the external telecommunication services of the British Commonwealth countries concerned. In 1966 the Commonwealth countries completed a review of the machinery for their collaboration in telecommunications and, as a result, the Commonwealth Telecommunications Organisation was established. The purpose of this body is to promote the efficient exploitation and development of the Commonwealth external telecommunications system.

A number of countries, including Australia, agreed in 1964 to establish a global commercial communications satellite system and Australia, represented by the Commission, is a member of the management body of the sixty-nine nation International Telecommunications Satellite Consortium (INTELSAT).

The Commission operates three 'standard' earth stations (at Carnarvon in Western Australia, Ceduna in South Australia and Moree in New South Wales) which can communicate via satellite with stations in other countries. The standard station at Carnarvon was brought into service on 1 October 1969, enabling a non-standard earth station at Carnarvon to be released for the full-time performance of telemetry, tracking and command functions for the INTELSAT organisation.

The transmission facilities used by the Commission in its external operations are submarine cables, satellites and high frequency radio. It operates a coastal radio service and, in association with the Post Office within Australia and with communication carriers in other Commonwealth and foreign countries, provides public message telegram, telephone, telex, photo-telegram, leased circuit and television services to most countries and places throughout the world.

The coastal radio service provides, as its principal function, essential maritime communications, including distress signals, navigation warnings, air-sea rescue service and radio-medical service messages, meteorological messages and time signals, as well as naval traffic as required. It provides also, by radiotelegraph and radiotelephone, commercial

communications with ships at sea and, by radiotelephone, message communication with small vessels. Western Australian coastal radio stations are located at Perth, Broome, Esperance and Geraldton.

The licensing of civil radiocommunication stations and the transmission of radio messages within Australia are the responsibility of the Postmaster-General's Department. The Royal Flying Doctor Service of Australia, to which reference is made in Part 3 of Chapter V, provides general telegraph facilities in remote areas through its extensive radio network.

At 30 June 1973 there were 180,590 civil radiocommunication stations authorised throughout Australia. They comprised 4,897 fixed stations, 15,626 land stations, 153,590 mobile stations, 6,470 amateur stations and 7 space services.

The numbers of each type of radiocommunication station authorised to operate in Western Australia at 30 June 1973 are given in the next table. The following definitions are relevant in considering the figures shown in the table. *Fixed Stations*—Stations established at fixed locations for communication with other stations similarly established. *Outposts*—Stations established in outback areas for communication with control stations such as those of the Royal Flying Doctor Service. *Land Stations*—Stations established at fixed locations for communication with mobile stations. *Coast Stations*—Land stations for communication with ocean-going vessels. *Mobile Stations*—Equipment installed in aircraft (aeronautical), motor vehicles (land mobile services), harbour vessels (harbour mobile services) and ocean-going vessels (ship), and mobile equipment of organisations such as the Royal Flying Doctor Service. *Radiodetermination Stations*—Stations employed for the determination of position, or the obtaining of information relating to position, by means of the propagation of radio waves. *Space Services*—Radiocommunication services, between earth stations and space stations, between space stations or between earth stations when signals are re-transmitted by space stations, or transmitted by reflection from objects in space, excluding reflection or scattering by the ionosphere or within the earth's atmosphere.

CIVIL RADIOCOMMUNICATION STATIONS AUTHORISED AT 30 JUNE 1973

Type of station	Number	Type of station	Number
TRANSMITTING AND RECEIVING—		TRANSMITTING AND RECEIVING—cont.	
Fixed stations—		Mobile stations—	
Aeronautical	4	Aeronautical	367
Services with other countries	15	Land mobile services	14,954
Outpost	397	Harbour mobile services	291
Other	389	Outpost	987
Land stations—		Radiodetermination	89
Aeronautical	39	Ship	1,622
Base stations—		Space services	2
Land mobile services....	1,718	Amateur	516
Harbour mobile services	35		
Coast	62	TOTAL	21,580
Experimental	55	RECEIVING ONLY (fixed)	105
Repeater	38		
		GRAND TOTAL	21,685

BROADCASTING AND TELEVISION

Broadcasting and television services throughout Australia are controlled by the Australian Broadcasting Control Board under the Ministerial direction of the Postmaster-General. The Board is constituted under a provision of the *Broadcasting and Television Act 1942-1973*, which places under its general control the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service. The Act prescribes the fees payable for broadcast listeners' licences and television viewers' licences, while the fees to be charged for licences to operate commercial broadcasting and television stations are provided for in the *Broadcasting Stations Licence Fees Act 1964-1973* and the *Television Stations Licence Fees Act 1964-1966*.

The principal functions of the Australian Broadcasting Control Board, which consists of three full-time and two part-time members, are to ensure that services by broadcasting stations and television stations are in accordance with approved plans, that stations are

operated in accordance with appropriate technical standards, and that adequate and comprehensive programmes are provided. Subject to the approval of the Minister and of the Treasurer, the Board may give financial and other assistance to commercial broadcasting stations for the purpose of ensuring that programmes of adequate extent, standard and variety are provided in the areas which they serve. The Board is required to hold public inquiries into applications for licences for commercial broadcasting and television stations in areas for which the Minister proposes to grant licences. It is also the responsibility of the Board to determine, subject to any direction of the Minister, the situation, operating power and operating frequencies of broadcasting and television stations.

The Australian Broadcasting Commission, which is constituted under the *Broadcasting and Television Act 1942-1973*, controls the activities of, and provides programmes for, the National Broadcasting Service and the National Television Service which use transmitters operated by the Postmaster-General's Department. The operations of the Commission are financed by appropriations made by the Australian Parliament.

The income of licensees of commercial broadcasting and television stations is derived from advertisements and other forms of publicity.

Commercial broadcasting stations are operated under licences granted and renewed by the Postmaster-General after taking into consideration any recommendations which have been made by the Broadcasting Control Board. The initial period of a licence is five years and renewals are granted for a period of one year.

Commercial television stations are also operated under licences granted and renewed by the Postmaster-General. The initial grant of a licence is for a period of five years and thereafter the licence is renewable annually.

Broadcasting and Television Stations

In 1923, the first radio broadcasting station commenced operations in Australia and, in the following year, station 6WF (Westralian Farmers) opened in Perth.

Television commenced in Australia on 16 September 1956 when station TCN, Sydney began regular transmission. By 30 June 1973 the number of stations in operation had increased to a total of 101, comprising fifty-three national stations and forty-eight commercial stations.

The first television station in Western Australia commenced full-scale transmission in Perth on 16 October 1959 and, at 30 June 1973, three metropolitan and ten country television stations were operating.

BROADCASTING STATIONS AT 30 JUNE 1973

NATIONAL STATIONS					COMMERCIAL STATIONS				
Type and location	Call sign	Frequency (kHz)	Aerial power (watts)	Hours of service per week (a)	Type and location	Call sign	Frequency (kHz)	Aerial power (watts)	Hours of service per week (a)
Medium frequency—					Perth	6IX	1,080	2,000	168
Perth	6WF	720	50,000	126	"	6KY	1,210	2,000	168
"	6WN	810	10,000	126½	"	6PM	1,000	2,000	168
Albany	6AL	650	400	126	"	6PR	880	2,000	168
Broome	6BE	670	50	126	Albany	6VA	780	2,000	129
Busselton	6BS	680	4,000	126	Bridgetown	6BY	900	2,000	116
Carnarvon	6CA	850	200	126	Bunbury	6TZ	960	2,000	135
Dalwallinu	6DL	530	10,000	126	Collie	6CJ	1,130	2,000	135
Derby	6DB	870	2,000	126	Geraldton	6GE	1,010	2,000	121
Esperance	6ED	840	1,000	126	Kalgoorlie	6KG	980	2,000	117
Geraldton	6GN	830	2,000	126	Katanning	6WB	1,070	2,000	116
Kalgoorlie	6GF	660	2,000	126	Merredin	6MD	1,100	2,000	119
Norham	6NM	600	200	126	Narrogin	6NA	920	2,000	121½
Port Hedland	6PH	600	2,000	126	Northam	6AM	860	2,000	120
Wagin	6WA	560	50,000	126					
High frequency—									
Perth	VLW	(b)	(b)	126					

(a) To the nearest quarter hour. (b) The station operates two transmitters, of 10,000 and 50,000 watts. Frequencies are varied as required to obtain optimum results.

TELEVISION STATIONS AT 30 JUNE 1973

Call sign and channel	Area served	Location of transmitter	Authorised frequencies (mHz)	Polarisation and authorised power (kW e.r.p.) (a)	Hours of service per week (b)	Date of commencement of operations (c)
NATIONAL STATIONS						
ABW-2	Perth	Bickley	Vision 63-70 Sound 64.25 69.75	Horizontal Vision 100 Sound 10	89½	7 May 1960
ABAW-2	Southern Agricultural	Mount Barker	Vision 63-70 Sound 64.24 69.74	Vertical Vision 100 Sound 10	89½	6 June 1966
ABCW-4	Central Agricultural....	Mawson Trig....	Vision 94-101 Sound 95.26 100.76	Horizontal Vision 100 Sound 10	89½	28 March 1966
ABCNW-7	Carnarvon	Carnarvon	Vision 181-188 Sound 182.25 187.75	Horizontal Vision 0.1 Sound 0.01	89½	30 June 1972
ABGW-6	Geraldton	Geraldton	Vision 174-181 Sound 175.24 180.74	Horizontal Vision 10 Sound 1	89½	8 December 1969
ABKW-6	Kalgoorlie	Kalgoorlie	Vision 174-181 Sound 175.25 180.75	Horizontal Vision 8 Sound 0.8	89½	27 January 1970
ABNW-7	Norseman	Norseman Microwave Repeater	Vision 181-188 Sound 182.24 187.74	Horizontal Vision 0.05 Sound 0.005	89½	14 April 1971
ABSW-5	Bunbury	Mount Lennard	Vision 101-108 Sound 102.25 107.75	Horizontal Vision 100 Sound 10	89½	10 May 1965
COMMERCIAL STATIONS						
STW-9	Perth	Bickley	Vision 195-202 Sound 196.25 201.75	Horizontal Vision 100 Sound 10	100½	12 June 1965
TVW-7	Perth	Bickley	Vision 181-188 Sound 182.25 187.75	Horizontal Vision 100 Sound 10	115	16 October 1959
BTW-3	Bunbury	Mount Lennard	Vision 85-92 Sound 86.24 91.74	Horizontal Vision 50 Sound 5	40	10 March 1967
GSW-9	Southern Agricultural	Mount Barker	Vision 195-202 Sound 196.24 201.74	Vertical Vision 50 Sound 5	40	23 August 1968
VEW-8	Kalgoorlie	Kalgoorlie	Vision 188-195 Sound 189.25 194.75	Horizontal Vision 8 Sound 0.8	37½	18 June 1971

(a) Effective radiated power.

(b) To nearest quarter hour.

(c) Date on which full-scale transmission began.

Television transmissions by means of either a translator station or a repeater station are provided to some areas of the State not served by the stations shown in the above table. Translator stations are low-powered stations which receive signals from a parent station or another translator station and re-transmit those signals on a different frequency channel. They serve mainly isolated areas where there is not satisfactory reception from high-powered stations. Repeater stations are stations of low operating power designed to transmit only programmes recorded on magnetic tape.

At 30 June 1973 four translator stations were in operation in Western Australia, at Kambalda, receiving signals from national station ABKW-6 and commercial station VEW-8 Kalgoorlie, and at Katanning and Wagin receiving signals from the parent station ABW-2 Perth. At the same date television repeater stations were operating at Cockatoo Island, Dampier, Karratha, Koolan Island, Mount Nameless, Newman, Paraburdoo and Tom Price. Low-power national television stations are planned for Carnamah, Dampier, Esperance, Karratha, Mingenew, Moora, Port Hedland, Roebourne, Southern Cross and Three Springs. Commercial translator stations have been approved for Albany, Katanning and Wagin and a national translator station for Albany.

Receiving Licences

Broadcast listeners', television viewers', and combined receiving licences are issued at post offices in accordance with the provisions of the *Broadcasting and Television Act 1942-1973*, which stipulates that, except as prescribed, a person shall not use, maintain or have in his possession a broadcast or television receiver unless there is in force a licence which applies to that receiver. A broadcast listener's licence or a television viewer's licence, whichever is appropriate, authorises the operation of any broadcast receiver or any television receiver, which is in the possession of the holder of a licence, or of a member of his family, at the address specified in the licence and is ordinarily kept at that address; or is installed in a vehicle which is ordinarily in the possession of the holder, or a member of his family, and is ordinarily kept at that address when not in use. A person who has both broadcast and television receivers at the one address is required to take out a combined receiving licence, provision for which was introduced by legislation effective from 1 April 1965.

A licence may be granted free of charge to a blind person over sixteen years of age or to a person or authority conducting a school, and at a concession rate to certain classes of pensioners. Receivers provided for the use of inmates of an institution (including a hospital) are covered by an appropriate licence held by the institution. Persons residing in Zone 2 may also be granted a broadcast listener's licence at a reduced rate. Zone 1 is the areas within 250 miles of specified broadcasting stations and Zone 2 is the remainder of Australia.

Each broadcast or television receiver let out on hire (except under a hire purchase agreement) must be covered by a hirer's licence held by the person or firm from whom the receiver is hired. The keeper of a lodging house (which includes a hotel, motel, boarding house or any other premises where lodging or sleeping accommodation is provided for reward) must take out a lodging house licence for each broadcast or television receiver provided by the proprietor in any room or part of the lodging house occupied or available for occupation by lodgers. From 1 October 1971, where a broadcast and television receiver are kept in the same room of a lodging house, the proprietor may take out a combined receiving licence.

RECEIVING LICENCES

Class of licence	Number in force at 30 June—				
	1969	1970	1971	1972	1973

BROADCAST LISTENERS' LICENCES

Ordinary	33,933	28,961	24,574	23,043	22,428
Hirers'	55	56	106	101	180
Lodging house	724	1,447	1,590	1,866	920
Pensioners'	8,124	7,236	6,168	5,422	4,937
Total	42,836	37,700	32,438	30,432	28,465

TELEVISION VIEWERS' LICENCES

Ordinary	11,525	10,923	10,385	10,364	10,510
Hirers'	22,230	23,871	27,280	29,655	33,979
Lodging house	778	1,804	1,925	1,684	1,151
Pensioners'	1,977	2,115	2,160	2,282	2,422
Total	36,510	38,713	41,750	43,985	48,062

COMBINED RECEIVING LICENCES

Ordinary	125,131	134,558	141,815	145,319	150,152
Pensioners'	20,948	23,557	25,425	27,527	29,823
Free (a)	718	864	892	837	870
Lodging house	(b)	(b)	(b)	1,115	2,134
Total	146,797	158,979	168,132	174,798	182,979

(a) Blind persons and schools.

(b) Combined receiving licences not available for this category prior to 1 October 1971.

Revenue in Western Australia from fees for all receiving licences amounted to \$3,127,068 in 1968-69, \$3,483,474 in 1969-70, \$3,689,269 in 1970-71, \$4,641,543 in 1971-72 and \$5,113,606 in 1972-73.

The total number of receiving licences in force in Australia at 30 June 1973 was 3,333,873, comprising 321,040 broadcast listeners', 519,404 television viewers', and 2,493,429 combined receiving licences. Revenue from licence fees amounted to \$67,050,491 in 1972-73 for Australia as a whole.

The annual fee payable at 31 December 1973 for each class of licence is shown in the following table.

**BROADCAST LISTENERS' AND TELEVISION VIEWERS' LICENCES
ANNUAL FEES: 31 DECEMBER 1973**

Class of licence	Ordinary rate	Pensioner rate
	\$	\$
Broadcast listener's licence and hirer's licence for a broadcast receiver—		
Zone 1	8.00	1.00
Zone 2	4.25	0.70
Lodging house licence for a broadcast receiver—		
Zone 1	8.00	....
Zone 2	4.25	....
Television viewer's licence and hirer's licence for a television receiver	19.00	3.00
Lodging house licence for a television receiver	19.00	....
Combined receiving licence (a)	26.50	4.00

(a) Available to individuals and lodging house keepers.

Analysis of Programmes

The particulars shown in the following tables have been taken from the Report of the Australian Broadcasting Control Board for the year ended 30 June 1973.

Broadcasting. The analysis of broadcasting programmes for Australia as a whole, as shown in the following table, is based on the combined figures from two surveys conducted by the Board in October 1972 and March 1973. In each case programmes of stations in State capital cities were monitored on a sampling basis for one minute in each ten minutes of transmission between 6.00 a.m. and 10.30 p.m. for a full week.

**BROADCASTING STATIONS—ANALYSIS OF PROGRAMMES
METROPOLITAN STATIONS: AUSTRALIA
(Per cent)**

Programme category	National (12 stations)	Commercial (25 stations)	All stations (37 stations)
Entertainment—			
Light and popular music	22.2	54.1	44.1
The arts (a)	23.3	0.1	7.4
Variety	1.1	1.4	1.3
Drama	3.9	0.2	1.4
Other	5.4	6.4	6.1
Total	55.9	62.2	60.3
Information and services—			
News	11.6	9.0	9.8
Sport	4.9	6.4	5.9
Information (b)	4.8	1.6	2.6
Religious	1.8	1.3	1.5
Social and political	15.8	3.1	7.0
Family (c)	0.6	1.4	1.1
Educational (d)	2.9	....	0.9
Children's	1.7	....	0.6
Total	44.1	22.8	29.4
Advertisements ....	....	15.0	10.3
GRAND TOTAL	100.0	100.0	100.0

(a) Serious music and opera; readings of prose and poetry; literary and art criticism.

(b) Includes such topics as aspects

of science; other countries and peoples; agriculture and other industries.

(c) Includes programmes dealing with cooking;

house and garden; hobbies; care of pets; health and physical fitness.

(d) Programmes designed as an aid to formal teaching;

kindergarten sessions.

Television. The analysis of television programmes, as shown in the following table, is based on a sample of commercial and national programmes televised during 1972. In this period, the sample amounted to approximately 50 per cent. Details of commercial television programmes are derived from data supplied regularly by each station to the Board and details of national television programmes are obtained from information supplied by the Australian Broadcasting Commission. For the purpose of the table the national programmes analysed are those of ABV-2 Melbourne as they are considered to be reasonably representative of programmes of the national television service.

TELEVISION STATIONS—ANALYSIS OF PROGRAMMES: AUSTRALIA
(Per cent)

Programme category	Metropolitan stations			Country stations (a)
	Commercial (b)	National	All stations	Commercial (b)
Drama—				
Serious	0.1	0.1	0.1	0.1
Adventure	11.7	4.6	10.1	9.6
Crime and suspense	8.0	2.5	6.7	10.2
Domestic and comedy	15.3	10.2	14.1	18.3
Western	3.6	0.7	2.9	5.3
Miscellaneous	11.5	3.6	9.7	9.7
Total	50.2	21.7	43.6	53.2
Light entertainment—				
Cartoons	5.9	3.9	5.5	4.4
Light music	2.0	2.5	2.1	1.7
Personality programmes	10.4	1.1	8.3	9.5
Talent programmes	0.9	...	0.7	1.6
Variety	2.7	1.1	2.4	2.3
Total	21.9	8.6	19.0	19.5
Sport	7.0	12.0	8.1	7.2
News	5.0	6.8	5.4	8.9
Children—				
Kindergarten	4.7	16.0	7.2	2.0
Other	3.9	3.0	3.7	2.5
Total	20.6	37.8	24.4	20.6
Family activities	1.8	0.8	1.6	1.3
Information	2.0	4.1	2.5	2.2
Current affairs	1.7	8.7	3.3	1.5
Political matter	0.2	0.3	0.2	0.3
Religious matter	1.2	1.6	1.3	1.3
The arts .....	...	1.0	0.3	...
Education—				
Formal .....	...	15.2	3.5	...
Other	0.4	0.2	0.3	0.1
Total	7.3	31.9	13.0	6.7
GRAND TOTAL	100.0	100.0	100.0	100.0

(a) Owing to the similarity of programmes for all national stations a separate analysis for country stations is not made.

(b) Excludes time occupied by advertisements. A survey in 1972 showed that, for Melbourne stations, advertisements occupied 15.0 per cent of the total time.

CHAPTER X—INDUSTRIAL CONDITIONS, EMPLOYMENT AND PRICES

Part 1—Industrial Conditions

INDUSTRIAL AUTHORITIES

Federal Authorities

A Commonwealth Court of Conciliation and Arbitration was established under the provisions of the *Commonwealth Conciliation and Arbitration Act 1904*. By an amendment made to the Conciliation and Arbitration Act in 1956 the Commonwealth arbitration system was reorganised by the creation of two separate authorities to deal with matters formerly within the sole jurisdiction of the Court. The amendment had the effect of allocating to a Commonwealth Industrial Court the judicial functions, and to a Commonwealth Conciliation and Arbitration Commission the arbitral functions, previously carried out by the Commonwealth Court of Conciliation and Arbitration.

Under the provisions of the *Conciliation and Arbitration Act 1973* the name of the Commonwealth Industrial Court was changed to Australian Industrial Court, and that of the Commonwealth Conciliation and Arbitration Commission to Australian Conciliation and Arbitration Commission, with effect from 13 November 1973.

Australian Industrial Court. The Australian Industrial Court, as constituted by the *Conciliation and Arbitration Act 1904-1973*, comprises a Chief Judge and not more than nine other Judges. The Act provides that, except in respect of certain specified matters, the jurisdiction of the Court shall be exercised by not less than three Judges. A single Judge may refer a question of law for the opinion of the Court constituted by not less than three Judges. The Australian Conciliation and Arbitration Commission may also refer a question of law for the opinion of the Court. Appeal from a judgement of the Australian Industrial Court may, in certain circumstances, be made to the High Court of Australia, but only when the High Court grants leave to appeal.

Australian Conciliation and Arbitration Commission. The Australian Conciliation and Arbitration Commission, according to the provisions of the *Conciliation and Arbitration Act 1904-1973*, comprises a President and such numbers of Deputy Presidents and of Commissioners 'as are necessary from time to time'. The President and the Deputy Presidents are described as 'Presidential Members' of the Commission. The powers of the Commission include the prevention or settlement, by conciliation or arbitration, of industrial disputes which extend beyond the limits of any one State, but the Commission is authorised to conciliate or arbitrate in respect of any dispute or industrial matter associated with Australian Government undertakings or projects. A Full Bench of the Commission consists of not less than three members, including at least two Presidential Members. The power to make awards or certify agreements making provision for, or altering, standard hours, rates of wages (including a minimum wage), annual leave or long service leave is exercisable only by a Full Bench, except where the provision or alteration gives effect to matters, or is in accordance with principles, determined by a Full Bench. The Principal Registry of the Commission is in Melbourne, Victoria, and there is a Deputy Industrial Registrar in each State.

Western Australian Authorities

A Court of Arbitration was established in Western Australia in 1901 under the provisions of the *Industrial Conciliation and Arbitration Act, 1900*. The Court comprised a President, a representative of associations of employers and a representative of associations

of workers. The Court of Arbitration was replaced, with effect from 1 February 1964, by the Western Australian Industrial Appeal Court and The Western Australian Industrial Commission, authorities constituted in terms of the *Industrial Arbitration Act, 1912-1973*.

Western Australian Industrial Appeal Court. The Western Australian Industrial Appeal Court consists of three Judges, one of whom is President of the Court. The President and the other members are nominated by the Chief Justice of Western Australia. Certain of the functions, powers and jurisdiction conferred on the Court may be exercised by any member, on the nomination of the President, sitting or acting alone. An appeal lies to the Court from any decision of The Western Australian Industrial Commission or the Commission in Court Session, but only on the ground that such decision is erroneous in law or is in excess of jurisdiction.

The Western Australian Industrial Commission. The Western Australian Industrial Commission consists of a Chief Industrial Commissioner and 'such number of other Commissioners as may, from time to time, be necessary'. At 31 July 1974, the Commission comprised a Chief Industrial Commissioner and five other Commissioners. The Act provides that a Commissioner sitting or acting alone constitutes the Commission and may exercise all the powers and jurisdiction of the Commission.

The Commission is empowered to inquire into any industrial matter or industrial dispute in any industry and to make orders or awards fixing the prices for work done by and the rates of wages payable to workers; fixing the number of hours and the times to be worked in order to entitle those workers to the wages so fixed; limiting the hours of piece workers; fixing the rates for overtime, work on holidays, shift work, week-end work and other special work, including allowances as compensation for overtime; determining any industrial matter; and declaring what deduction may be made from the prices or wages of workers for board or residence or board and residence provided for workers and for any customary provisions or payments in kind conceded to such workers.

The Commission in Court Session is constituted by not less than three Commissioners sitting or acting together. Appeals from decisions of a single Commissioner are heard and determined by the Commission in Court Session. Such appeals are restricted to the evidence and matters raised in the proceedings before the single Commissioner.

The *Industrial Arbitration Act Amendment Act, 1973* provides that a Commissioner shall appoint as mediator a person nominated by the parties to an industrial dispute when so requested by the parties, and subject to the nominated person's acceptance of the appointment.

THE WESTERN AUSTRALIAN INDUSTRIAL COMMISSION

Particulars	At 30 June—				
	1969	1970	1971	1972	1973
Awards in force	374	384	389	396	395
Industrial agreements in force	105	103	116	134	142
Unions of workers—					
Number	102	100	99	97	92
Membership	130,518	137,556	149,846	150,910	157,175
Unions of employers—					
Number	13	13	13	13	13
Membership	1,814	1,830	1,864	1,908	1,777

Western Australian Coal Industry Tribunal. The Western Australian Coal Industry Tribunal, as constituted under the *Mining Act, 1904-1973*, consists of five members appointed by the Governor. One member is chairman of the Tribunal, and there are two members representing employees, and two representing employers. The Tribunal has power to consider and determine industrial disputes, not extending beyond the limits of the State, and other matters relating to the coal-mining industry.

EMPLOYER ORGANISATIONS

The first employers' organisation in Western Australia was the West Australian Chamber of Commerce which was founded in 1853 and was replaced by the Fremantle Chamber of Commerce in 1873. The Perth Chamber of Commerce (Incorporated) was founded in 1890. Other Chambers of Commerce operate in various parts of the State.

The West Australian Chamber of Manufactures (Incorporated) commenced in 1890, but disbanded and was founded in its present form in 1899.

The Western Australian Employers' Federation (Incorporated) was formed in 1913 to handle labour relations for all private industry throughout the State. It is the major employers' organisation handling labour relations issues and specialises in all aspects of this function. Its organisation includes seventy-two affiliated associations and a number of individual industries comprising a membership of more than 20,000 employers. The Federation had also more than 6,600 individual members at 30 June 1973.

The Federation is controlled by a Council of representatives of each member association and of several major industries which have no association. Its subscribing members elect a Finance Board to regulate its daily activities in matters concerning policy.

The Federation represents employers in all aspects of the negotiation of industrial awards and agreements, in the settlement of industrial disputes, including arbitration, and in direct relationships with the trade unions. It is affiliated with the Australian Council of Employers' Federations and is a member of the Central Industrial Secretariat of the Federations and Chambers of Manufactures of each State. Through the Australian Council it has overseas affiliations with the International Organisation of Employers.

EMPLOYEE ORGANISATIONS

The trade unions in Western Australia cover all forms of occupations from the unskilled to the professional worker. The great majority of union organisations are national in character with State branches registered with both the Federal and State industrial authorities.

Major organisations include the Trades and Labor Council of Western Australia, the State branches of the Australian Council of Salaried and Professional Associations, the Australian Public Service Federation, and the Council of Commonwealth Public Service Organisations. These four groups cover most of the wage and salary earners employed in the private and governmental sectors of industry and commerce.

The Trades and Labor Council of Western Australia, which is the State branch of the Australian Council of Trade Unions (A.C.T.U.), has provincial councils at Albany, Geraldton, Kalgoorlie and Port Hedland. At 30 June 1973 it had affiliated with it eighty-six State resident unions having a membership of approximately 96,000.

The Trades and Labor Council, representing the largest group of wage and salary earners, frequently acts on behalf of employees in matters before the Western Australian industrial authorities such as wages, hours, holidays, long service leave, and other associated matters of a standard or uniform nature.

TRADE UNIONS—NUMBER AND MEMBERSHIP

Date	Number of unions	Number of members ('000)			Proportion of total wage and salary earners (a) (per cent)		
		Males	Females	Persons	Males	Females	Persons
End of December—							
1968	157	123.1	37.8	160.9	57	39	52
1969	153	122.8	39.3	162.2	55	37	49
1970	155	127.0	41.6	168.6	53	36	48
1971	154	133.5	44.8	178.3	55	37	49
1972	151	135.7	49.1	184.8	57	39	51

(a) Approximate; see accompanying letterpress on page 470.

The preceding table gives particulars of the number of trade unions in Western Australia and the number of members at the end of December of the years 1968 to 1972. The table also shows the estimated proportion of trade union members to total wage and salary earners in employment. As estimates of numbers of wage and salary earners in employment do not include employees engaged in agriculture or in private domestic service (see letterpress *Estimates of Employment* on page 497), the percentages have been calculated on figures obtained by adding to the estimates for December in each year the number of employees in agriculture and private domestic service recorded at the 1966 Population Census.

The following table shows the membership of trade unions in Western Australia in broad industry groups. The table does not give a precise classification of trade union members according to industry, because in cases where the members of a union are employed in a number of industries they have been classified to the predominant industry for the union concerned.

TRADE UNIONS—MEMBERSHIP ACCORDING TO INDUSTRY
(‘000)

Date	Manufacturing	Building and construction	Transport	Public authority n.e.i., etc. (a)	Other (b)	All groups
End of December—						
1967	33.5	13.9	19.3	33.1	52.5	152.3
1968	34.3	17.9	20.0	35.0	53.9	160.9
1969	37.8	12.8	19.6	36.8	55.2	162.2
1970	40.9	13.6	18.5	38.7	56.9	168.6
1971	40.9	12.9	19.0	41.6	63.9	178.3

n.e.i. denotes ‘not elsewhere included’.

(a) Includes Communication and municipal, etc.

(b) Includes Agriculture, etc.; Mining and quarrying; Banking, insurance and clerical; Wholesale and retail trade; Amusement, hotels, personal service, etc.; and Community and business services.

APPRENTICESHIP

The first registration of an apprentice in Western Australia was made on 25 May 1903 to the trade of book binding. At 31 December 1972 the total number of apprentices registered in this State was 11,666 in a wide variety of trades as given in the table on page 471.

Apprenticeships in this State are provided for and are subject to awards of The Western Australian Industrial Commission and registered industrial agreements. The Western Australian Industrial Commission functions by authority of the *Industrial Arbitration Act, 1912-1973*.

By definition, an apprentice is a person of either sex and of any age (other than the minimum age for which compulsory school attendance is required) who is apprenticed to learn or to be taught any industry, trade, craft or calling to which the Apprenticeship Regulations apply. The Commission controls all industrial aspects of apprenticeship while the Technical Education Division of the Education Department provides the technical training as prescribed by the various awards of the Commission and by industrial agreements.

The Western Australian Apprenticeship Advisory Council, which comprises two representatives each from employers, employees and the State Government, with the Under Secretary for Labour as Chairman, advises the Minister for Labour, the Minister for Education and the Commission on matters of policy in respect of apprenticeship.

The Council assigns to Apprenticeship Advisory Boards such matters of an advisory nature relating to its trade or group of trades as considered necessary. Recommendations made to the Council from a Board may, after consideration and approval by the Council, be submitted to the Commission or Director-General of Education with a view to their implementation. The Boards consist of representatives from employers and employees, together with a representative from the Technical Education Division of the Education

Department. An officer of the Department of Labour is Chairman of all Apprenticeship Advisory Boards, thereby establishing a permanent liaison between the Boards and the Council.

A major achievement has been the general acceptance by most trades and by the consent of all parties involved in apprenticeship agreements of the Council's policy of shortened terms on grounds of educational achievement and vocational aptitude.

Technical school attendance is compulsory when the Technical Education Division has suitable classes available in schools within a twelve-mile radius of the apprentice's home. Block release training applies in the following trades: carpentry and joinery, painting, vehicle body building, panel beating, and spray painting. In other cases day release training is prescribed. In the building trade compulsory attendance for intensive training is prescribed for country apprentices and correspondence lessons are available in most other trades.

Federal awards are of much less significance than State awards in apprenticeship matters in Western Australia. The total numbers of apprentices employed in this State at 31 December 1972 under the provisions of the *Conciliation and Arbitration Act 1904-1973* (Commonwealth) and the *Public Service Act 1922-1973* (Commonwealth) were 208 and 98, respectively. Section 52 of the Conciliation and Arbitration Act enables the Australian Conciliation and Arbitration Commission to issue awards covering the rates of pay and conditions of employment of apprentices. In practice, however, the authority in such matters is usually delegated or referred to the State. As a result, the Industrial Registrar of The Western Australian Industrial Commission registers agreements involving apprentices and, on the completion of the term of apprenticeship, issues a Final Certificate, provided the apprentice has met the statutory requirements of the State in respect of examinations conducted by The Western Australian Industrial Commission and the Technical Education Division of the Education Department.

APPRENTICESHIP—NUMBER OF EFFECTIVE REGISTRATIONS

Trade	At 31 December—			Trade	At 31 December—		
	1970	1971	1972		1970	1971	1972
State awards—				State awards—continued			
Baking	78	82	92	Optical	11	17	20
Bootmaking	7	9	4	Pastry cooking	42	42	52
Building—				Printing—			
Bricklaying	153	146	124	Composing	131	144	136
Carpentry and joinery	1,057	1,027	960	Letterpress machining	43	43	42
Painting and signwriting	339	337	339	Other	101	91	98
Plastering	110	100	95	Saddlery and leather working	4	2	3
Plumbing	578	601	570	Scientific instrument making	61	65	59
Other	6	6	5	Sheetmetal working	240	273	308
Butchering and smallgoods	477	472	498	Timber machining	45	38	39
Cooking			38	Vehicle building—			
Dental technician	40	39	33	Bodymaking	123	117	98
Electrical—				Panel beating	424	455	451
Auto-electrical fitting	104	117	119	Spray painting	228	241	253
Electrical fitting	622	638	620	Trimming	2	38	41
Electrical installing	662	695	689	All other	29	6	10
Radio and television servicing	80	93	106				
Furniture—				Total, State awards	10,949	11,265	11,360
Cabinetmaking	353	348	341				
Upholstery	35	40	42	Federal awards—			
Woodmachining	91	81	84	Aircraft engineering	40	23	15
Other	55	50	46	Bootmaking	16	9	4
Glazing	48	57	54	Metal trades	8	4	21
Hairdressing—				Printing—			
Ladies'	1,048	1,001	998	Composing	50	52	51
Men's	92	77	71	Letterpress machining	64	62	57
Jewellery and watchmaking	27	26	28	Other	17	22	29
Metal trades—				Shipwrighting	35	33	27
Boilermaking	561	622	572	All other	1	1	4
Fitting and first class machin- ing	49	63	82				
Fitting and turning	531	537	522	Total, Federal awards	231	206	208
Fitting	241	282	311				
Turning	61	61	64	Australian Government Depart- ments	71	67	98
Motor mechanic	1,487	1,572	1,669				
Moulding	47	49	40	GRAND TOTAL	11,251	11,538	11,666
Refrigeration fitting	130	143	144				
Tractor fitting	26	26	35				
Welding	165	166	223				
Other	105	130	132				

APPRENTICESHIP—REGISTRATIONS TO VARIOUS TRADES

Trade	1970	1971	1972	Trade	1970	1971	1972
State awards—				State awards—continued			
Baking	23	28	34	Optical	3	8	5
Bootmaking	3	3	....	Pastry cooking	16	12	21
Building—				Printing—			
Bricklaying	47	25	19	Composing	33	30	23
Carpentry and joinery	281	224	215	Letterpress machining	15	11	8
Painting and signwriting	90	86	69	Other	33	25	20
Plastering	52	17	29	Saddlery and leather working	1	1	1
Plumbing	164	145	118	Scientific instrument making	24	16	14
Other ....	....	2	2	Sheetmetal working	72	83	82
Butchering and smallgoods	120	122	166	Timber machining	9	7	8
Cooking ....	....	....	47	Vehicle building—			
Dental technician	10	8	9	Bodymaking	32	33	20
Electrical—				Panel beating	120	152	119
Auto-electrical fitting	33	49	26	Spray painting	74	76	78
Electrical fitting	187	164	142	Trimming	5	16	10
Electrical installing	232	159	163	All other	2	8	7
Radio and television servicing	23	27	30				
Furniture—				Total, State awards	3,180	3,111	3,027
Cabinetmaking	106	83	82				
Upholstery	10	16	12	Federal awards—			
Woodmachining	31	20	24	Aircraft engineering	4	1	3
Other	23	11	12	Bootmaking	6	1	....
Glazing	12	16	8	Metal trades ....	....	2	18
Hairdressing—				Printing—			
Ladies'	317	302	339	Composing	13	14	4
Men's	25	22	21	Letterpress machining	8	11	13
Jewellery and watchmaking	4	5	5	Other	3	6	7
Metal trades—				Shipwrighting	7	3	1
Boilermaking	163	210	143	All other	1	....	3
Fitting and first class machin-							
ing	13	26	36	Total, Federal awards	42	38	49
Fitting and turning	136	146	121				
Fitting	53	99	103	Australian Government Depart-			
Turning	12	18	18	ments	37	14	52
Motor mechanic	461	453	460				
Moulding	9	23	8	GRAND TOTAL	3,259	3,163	3,128
Refrigeration fitting	33	31	36				
Tractor fitting	4	4	17				
Welding	33	44	58				
Other	31	45	39				

INCIDENCE OF INDUSTRIAL AWARDS

The table below indicates the approximate proportions of Western Australian employees covered by awards, determinations and registered industrial agreements under Federal and State jurisdictions. The proportions not so covered (including those working under unregistered industrial agreements) are also shown. The figures summarise part of the data obtained from surveys of the Australian wage structure in April 1954, May 1963 and May 1968.

The estimates shown in the table were derived from returns collected from:

- a stratified random sample of most private employers subject to pay-roll tax;
- all public hospitals and marketing boards;
- all Australian Government and State Government departments and semi-government authorities; and
- a stratified random sample of local government bodies.

Because of coverage difficulties, certain employees were excluded from the surveys. For further information relating to the survey of May 1968 and for statistics in greater detail, the reader is referred to the annual *Labour Report* published by the Commonwealth Statistician, Canberra.

For a number of reasons, the results of the three surveys are not strictly comparable, and the statistics presented in the following table should therefore be regarded as providing only a broad indication of trends.

The term 'awards, etc.' as used in the table means awards or determinations of, and agreements registered with, Federal or State industrial authorities. Changes in the proportions of employees reported as affected by Federal awards and by State awards reflect changes in industry and occupational structure, including the creation of new industries; changes in the coverage of individual Federal and State awards; and the creation of new awards relating to employees not previously affected by awards.

PROPORTION OF EMPLOYEES AFFECTED BY AWARDS, ETC. (a)
(per cent)

Particulars	1954—April			1963—May			1968—May		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Employees affected by awards, etc.—									
Federal	12.5	18.7	13.9	13.3	14.8	13.6	16.9	15.7	16.6
State	77.1	71.8	75.9	76.5	74.4	76.0	70.7	76.1	72.1
Other employees	10.4	9.5	10.2	10.2	10.8	10.4	12.4	8.2	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Awards or determinations of, and agreements registered with, Federal or State industrial authorities.

INDUSTRIAL DISPUTES

Statistics of industrial disputes are compiled by the Commonwealth Statistician from data obtained from the following sources: direct collections from employers and trade unions concerning individual disputes; reports from government departments and authorities; reports of State and Federal industrial authorities; and information contained in trade journals, employer and trade union publications, and newspaper reports.

INDUSTRIAL DISPUTES (a)

Year	Number of disputes	Number of workers involved			Number of working days lost	Estimated loss in wages
		Directly	Indirectly (b)	Total		
1968	70	'000 18.3	'000 0.4	'000 18.7	'000 21.8	\$'000 281.8
1969	104	57.0	2.1	59.1	101.4	1,284.2
1970	125	44.4	2.1	46.5	141.1	1,963.3
1971	132	30.8	5.0	35.8	69.4	1,166.4
1972	105	24.2	4.1	28.3	94.6	1,677.2

(a) Excludes disputes involving cessation of work of less than 10 man-days.

(b) Persons thrown out of work at the establishments where the stoppages occurred, but not themselves parties to the dispute.

INDUSTRIAL DISPUTES (a)—ACCORDING TO INDUSTRY: 1972

Industry (b)	Number of disputes	Number of workers involved			Number of working days lost	Estimated loss in wages
		Directly	Indirectly (c)	Total		
Agriculture, forestry, fishing and hunting	1	'000 (d)	'000	'000	'000 (d)	\$'000 0.4
Mining—						
Coal mining						
Other mining	29	8.5	2.6	11.1	44.2	839.5
Manufacturing—						
Food, beverages and tobacco	3	0.5	0.1	0.6	1.0	17.2
Paper and paper products, printing and publishing	1	0.7		0.7	6.1	107.9
Metal products, machinery and equipment	9	1.4		1.4	11.5	194.8
Other manufacturing	5	1.6		1.6	5.6	106.9
Electricity, gas and water	1	0.1		0.1	0.1	0.8
Construction	15	2.3		2.3	11.1	199.5
Transport and storage; communication—						
Road transport; other transport and storage; communication	2	0.1		0.1	0.1	1.0
Railway transport; air transport	6	1.3	1.4	2.7	9.9	140.3
Water transport—						
Stevedoring services	26	5.2		5.2	3.5	49.9
Water transport (except stevedoring services)	3	0.1		0.1	0.1	1.0
Other industries	4	2.5		2.5	1.4	18.2
Total	105	24.2	4.1	28.3	94.6	1,677.2

(a) Excludes disputes involving cessation of work of less than 10 man-days.

(b) The statistics in this table are presented for the first time on the basis of the *Australian Standard Industrial Classification* (see page 394). For this reason they may not, in all cases, be directly comparable with figures shown in earlier issues.

(c) Persons thrown out of work at the establishments

(d) Less than 50.

In the two previous tables details of industrial disputes in Western Australia during the years 1968 to 1972 are given, together with an analysis, according to industry group, of disputes which were in progress in 1972. The statistics exclude disputes involving stoppages of work of less than ten man-days in the establishment where the stoppage occurred. Effects on other establishments resulting from lack of materials, disruption of transport services, power cuts, etc. are not measured by these statistics.

Particulars of all disputes in progress during the year are included in the annual figures, whether the dispute commenced in that year or was in progress at the beginning of the year. Consequently, details of 'the number of disputes' and 'workers involved' in disputes which commenced in any year, and were still in progress during the following year, are included in the figures for both years.

Particulars of some stoppages (e.g. those involving a large number of establishments) may be estimated and the statistics therefore should be regarded as giving a broad measure of the extent of stoppages of work (as defined).

INDUSTRIAL DISPUTES (a) ACCORDING TO DURATION—1972

Duration (working days)	Mining	Manufacturing	Construction	Stevedoring	Other industries	All industries
NUMBER OF DISPUTES (a)						
Up to 1 day	10	2	3	18	6	39
Over 1 and up to 2 days	5	6	1	6	6	24
Over 2 and up to 3 days	2	3	5	....	....	10
Over 3 but less than 5 days	4	4	3	1	3	15
5 to less than 10 days	7	2	2	1	2	14
10 to less than 20 days ....	....	1	1	....	....	2
20 to less than 40 days	1	....	....	....	....	1
Total	29	18	15	26	17	105

WORKERS INVOLVED (b) ('000)

Up to 1 day	2.8	0.6	0.3	3.8	2.4	10.0
Over 1 and up to 2 days	0.5	0.6	(c)	1.3	0.7	3.1
Over 2 and up to 3 days	0.8	0.3	0.8	....	....	1.9
Over 3 but less than 5 days	3.4	1.4	0.4	(c)	1.4	6.7
5 to less than 10 days	3.6	0.8	0.9	(c)	0.7	5.9
10 to less than 20 days ....	....	0.7	(c)	....	....	0.7
20 to less than 40 days	(c)	....	....	....	....	(c)
Total	11.1	4.3	2.3	5.2	5.3	28.3

WORKING DAYS LOST ('000 MAN-DAYS)

Up to 1 day	2.4	0.6	0.2	1.5	0.9	5.6
Over 1 and up to 2 days	0.8	1.1	(c)	1.6	1.1	4.6
Over 2 and up to 3 days	2.4	0.7	2.0	....	....	5.1
Over 3 but less than 5 days	14.3	7.5	1.8	0.1	3.5	27.2
5 to less than 10 days	24.0	5.1	6.9	0.3	6.1	42.4
10 to less than 20 days ....	....	9.3	0.2	....	....	9.5
20 to less than 40 days	0.3	....	....	....	....	0.3
Total	44.2	24.2	11.1	3.5	11.6	94.6

ESTIMATED LOSS IN WAGES (\$'000)

Up to 1 day	41.5	10.9	3.1	21.0	10.6	87.0
Over 1 and up to 2 days	14.4	18.3	0.8	23.9	17.7	75.0
Over 2 and up to 3 days	43.5	9.7	39.9	....	....	93.1
Over 3 but less than 5 days	282.9	126.5	38.1	1.3	25.4	474.2
5 to less than 10 days	451.3	104.0	113.4	3.7	107.9	780.4
10 to less than 20 days ....	....	157.3	4.2	....	....	161.5
20 to less than 40 days	6.0	....	....	....	....	6.0
Total	839.5	426.7	199.5	49.9	161.6	1,677.2

(a) Excludes disputes involving cessation of work of less than 10 man-days. (b) Includes workers indirectly involved, i.e. persons thrown out of work at the establishments where the stoppages occurred, but not themselves parties to the dispute.
(c) Less than 50.

WAGES AND EARNINGS

The Basic Wage

Commonwealth Basic Wage. The *Western Australian Year Book*, No. 7—1968 and earlier issues contain an account of the development of the Commonwealth basic wage from its inception until it was abandoned in 1967. In a unanimous judgment given on 5 June 1967 the Commonwealth Conciliation and Arbitration Commission announced 'the elimination of basic wages and margins and the introduction of total wages'. An increase of \$1 per week was awarded to all adult employees and the judgment stated that 'total wages will be arrived at by adding an amount of \$1 per week to the weekly award wages of all adult males and females . . .' and further, that the Commission had 'on this occasion deliberately awarded the same increase to adult females and adult males'. The increase was declared to become operative from the beginning of the first pay-period commencing on or after 1 July 1967.

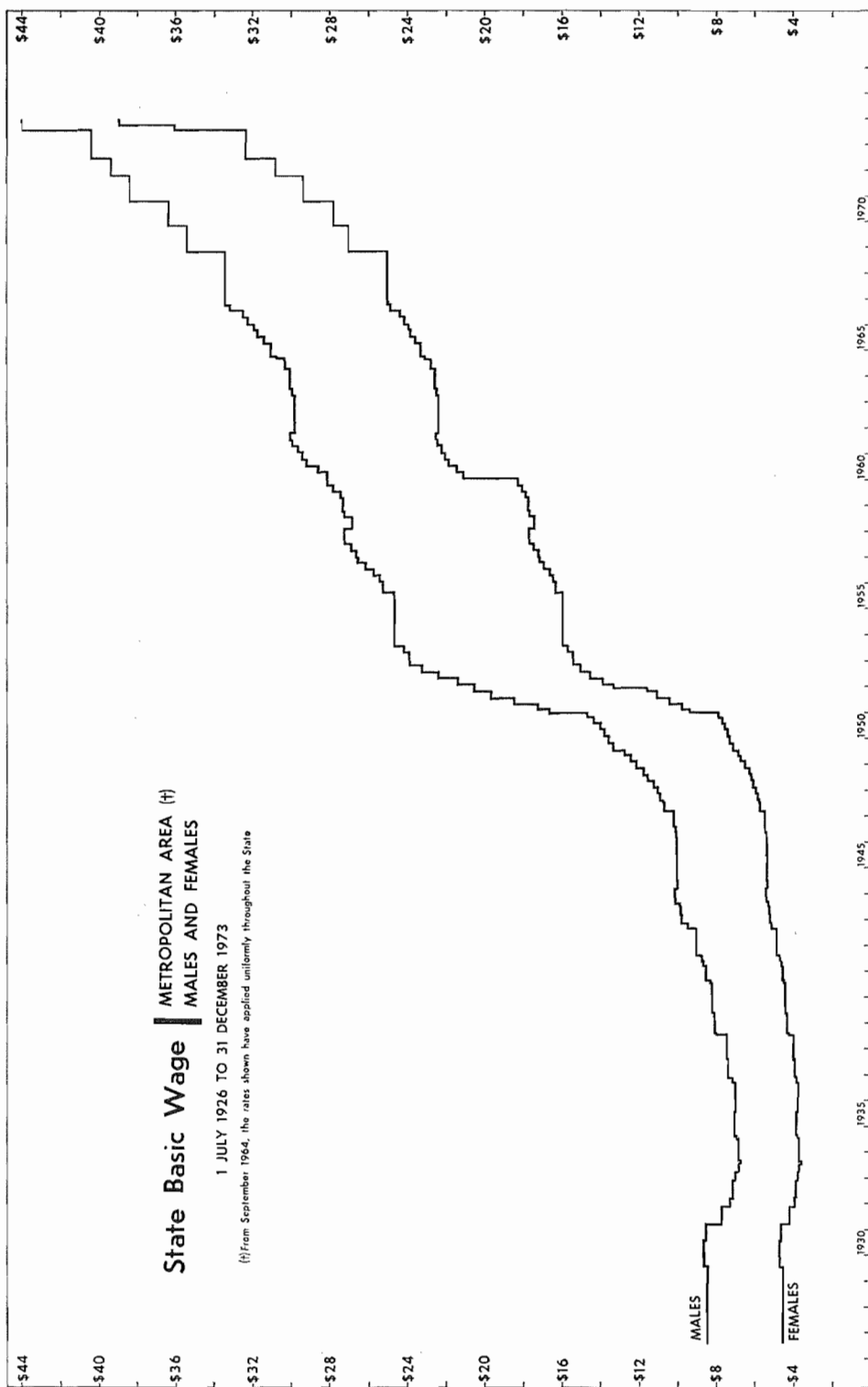
A table showing Commonwealth basic wage rates at 31 December of each year from 1923 to 1966 is given in the *Statistical Summary from 1829* appearing in the *Western Australian Year Book*, No. 9—1970 and earlier issues.

State Basic Wage. Reference is made in the *Western Australian Year Book*, No. 7—1968 and earlier issues to the work of the former Court of Arbitration in the field of wage determination from the declaration of the first State basic wage in 1926.

The Western Australian Industrial Commission came into operation on 1 February 1964, replacing the Court of Arbitration as the authority responsible for State basic wage determinations in Western Australia. The *Industrial Arbitration Act, 1912-1973* requires that such determinations shall be made by the Commission in Court Session. The Commission so constituted made its first adjustment to the basic wage on 27 April 1964, when it prescribed increased rates to apply on and from that date. As a result of this decision, the weekly rates payable to adult males became £15 4s. 2d. (\$30·42) in the Metropolitan Area, £15 2s. 7d. (\$30·26) in the South-West Land Division, and £14 16s. 8d. (\$29·67) in Goldfields Areas and other parts of the State. (For purposes of the basic wage, the 'Metropolitan Area' was the area comprised within a radius of fifteen miles from the General Post Office, Perth; the 'South-West Land Division' was the area so described in the Land Act, but excluding the 'Metropolitan Area'; and 'Goldfields Areas and other parts of the State' comprised the area outside the South-West Land Division. Reference to the South-West Land Division will be found on page 134.)

On 15 June 1964 the Trades and Labor Council of Western Australia, acting on behalf of registered unions, addressed to the Commission a request for an inquiry into the basic wage. A preliminary hearing was held on 3 July to consider questions of procedure, representation and related matters. The general inquiry began before the Commission in Court Session on 22 July and was completed on 14 August. Representatives of the unions and of the Western Australian Employers' Federation (Incorporated) made extensive submissions and the Crown Counsel, on behalf of the State Government, intervened in the public interest, as authorised under section 68 of the Industrial Arbitration Act. Judgment was given on 22 September. The Commission was unanimous in its conclusion that one basic wage should apply to the whole State, but was divided as to the amount of the wage. The majority view was that a weekly wage of £15 8s. (\$30·80) should be declared as appropriate to adult male workers, and an order was issued accordingly prescribing this amount for males and an amount of £11 11s. (\$23·10) for females, the rates to operate on and from 22 September 1964 and to apply uniformly throughout the State.

The *Industrial Arbitration Act Amendment Act, 1966*, which came into operation on 23 December 1966, provided that the rates which were current immediately prior to the date of commencement of the Act should remain unaltered until exceeded by the basic wage for the six capital cities as declared by the Commonwealth Conciliation and Arbitration Commission, and that subsequent alterations should be made in accordance with variations of that wage. (At 23 December 1966 the State basic wage for adult males was



\$33·50 per week and for adult females, \$25·13 per week. The corresponding Commonwealth basic wage rates for the six capital cities at the same date were \$32·80 and \$24·60.)

Reference is made in the preceding section *Commonwealth Basic Wage* to the decision given by the Commonwealth Conciliation and Arbitration Commission on 5 June 1967, when it announced the elimination of basic wages and margins from its awards, and the introduction of total wages to operate from the beginning of the first pay-period commencing on or after 1 July 1967. This decision provided also that total wages for adult males and adult females were to be increased by \$1 per week from the same date. Following this decision a number of unions in Western Australia applied to The Western Australian Industrial Commission seeking an increase of \$1 per week in margins for adult males and adult females, with proportionate increases for junior workers and apprentices. The Commission delivered its judgment on 27 June 1967. The terms of this decision were that the minimum weekly wage payable to adult male workers under certain awards be increased from \$36·55 to \$37·55; 'that the wage rates for adult workers not in receipt of the "minimum wage" be increased by 60 cents per week; and that other wage rates be adjusted as if the basic wage for males and the basic wage for females had been increased by that amount'. These increases were declared to operate from the beginning of the first pay-period commencing on or after 1 July 1967.

A further increase of \$1·35 per week for adult males and adult females was granted by the Commission in October 1968 to operate from the beginning of the first pay-period commencing on or after 25 October 1968.

The *Industrial Arbitration Act Amendment Act, 1968*, operative from 22 November 1968, restores to The Western Australian Industrial Commission the power to declare a basic wage, which had been removed by the amending Act of 1966. The 1968 amendment provides that the Commission in Court Session may at any time and from time to time, by order, '(a) determine and declare a basic wage for male workers; (b) determine and declare a basic wage for female workers; and (c) vary any basic wage for the time being in force, and any such basic wage so determined and declared or so varied shall be for all purposes, the basic wage for male workers or female workers throughout the State'.

The Act defines the term 'basic wage' as 'that wage or that part of a wage which in the opinion of the Commission, is just and reasonable for a worker to whom it applies, without regard to the circumstances pertaining to the work upon which, or the industry in which, such worker is employed'. In determining a basic wage the Commission is required by the Act to take into consideration the amount that it considers sufficient to enable the average worker to whom that basic wage shall apply to live in reasonable comfort. Although the Commission must also consider the economic capacity of industry, it may not reduce the wage to a level below that required for the maintenance of this standard of 'reasonable comfort'.

The Act prescribed basic wage rates of \$35·45 per week for adult male workers and \$27·08 per week for adult female workers, to apply on and from the date of commencement of the Act (22 November 1968). These amounts comprise the sum of the basic weekly wage rates of \$33·50 for males and \$25·13 for females, operative from 24 October 1966 (before the Commission's power to determine basic wages was removed by the 1966 amendment to the Act), and the subsequent increases of 60 cents per week granted in June 1967 and \$1·35 per week in October 1968.

The Commission is required to review the basic wage, or any variation of the wage, not later than twelve months from the date on which the wage (or variation) came into operation. It is provided by the Act that any variation shall take effect 'only after the expiration of such twelve months, unless in the opinion of the Commission there are special reasons existing in the circumstances of any particular case and it is just and equitable to otherwise determine'.

On 21 November 1969, following the annual review required under the Act, the Commission increased the basic wage for adult males by \$1 per week and for adult

females by 80 cents per week, with effect from the beginning of the first pay-period commencing on or after 24 November 1969.

On 3 August 1970, The Western Australian Industrial Commission began hearing an application by the Trades and Labor Council of Western Australia for an increase in the basic wage to \$48.35 per week for adult males and \$37.00 per week for adult females. The Council's claim was later amended to seek a basic wage of \$61.61 for males and \$47.12 for females, representing increases of \$25.16 and \$19.24 on the rates then current. The hearing of submissions and replies was completed on 7 September and the Commission announced its decision on 19 October.

As a result of the decision the basic wage for adult males became \$38.45 per week and for adult females \$29.40 per week, the new rates to operate from 26 October 1970.

The Commission also announced its intention 'to prescribe in such awards and industrial agreements as it appears proper so to do, a minimum wage for adult males of \$49.00 per week', operative from 26 October 1970.

Further, the Commission stated its intention 'to invite applications to include in such awards and industrial agreements as it may appear proper and appropriate so to do, a provision which will ensure to each employee a minimum payment 10 per cent in excess of the sum of the basic wage and margin prescribed for his particular class of work'.

The following table shows variations, from 22 September 1964, in the State basic wage rates payable to adult male and female workers employed under State industrial awards or registered agreements, or in accordance with the provisions of the Factories and Shops Act.

A similar table showing variations in the rates during the period from 29 January 1951 appears in *Statistics of Western Australia—Labour and Prices*. A table showing rates applying at 31 December of each year from 1926 is given in the *Statistical Summary from 1829* following this Chapter.

STATE BASIC WAGE—ADULT WEEKLY RATES
(\$)

Date of operation	Males	Females	Date of operation	Males	Females
1964—22 September	30.80	23.10	1968—22 November (b)	35.45	27.08
26 October	31.12	23.34	1969—24 November	36.45	27.88
1965—26 April	31.47	23.60	1970—26 October	38.45	29.40
26 July	31.78	23.84	1971—26 October	39.45	30.90
16 November	31.96	23.97	1972—26 June	40.45	32.40
1966—25 January	32.38	24.28	1973—8 June	44.00	36.00
2 May	32.65	24.49	17 September	44.00	39.00
2 August	33.26	24.95	1974—31 May	48.50	43.50
24 October (a)	33.50	25.13			

(a) See letterpress on page 477.
Act, 1968.

(b) Rates prescribed under the provisions of the *Industrial Arbitration Act Amendment*

Equal Pay for Male and Female Workers

State Awards. It is provided in Part X of the *Industrial Arbitration Act, 1912-1973* that, where The Western Australian Industrial Commission 'is satisfied that male and female workers are performing work of the same or a like nature and of equal value, the same rates of wages shall . . . be fixed irrespective of the sex of the workers'.

Federal Awards. Two benches of the Commonwealth Conciliation and Arbitration Commission sat jointly from 25 February to 22 May 1969 to take evidence and hear argument on trade union claims for equal pay between the sexes. Both benches reached a common conclusion and on 19 June 1969 published their decision and reasons for their decision. The Commission stated it was prepared to implement the principle of equal pay for equal work by introducing into Federal awards and determinations the principles contained in State Acts on equal pay. It decided that no increases should be granted to adult females without an examination of the work done and that implementation of equal pay should be spread over a period.

On 15 December 1972 the Commonwealth Conciliation and Arbitration Commission, in its decision in the National Wage and Equal Pay Cases 1972, outlined the principle of 'equal pay for work of equal value' to be applied to all Federal awards and determinations. The Commission stated that the principle meant the fixation of award rates of pay for both adult and junior females by a consideration of the work performed irrespective of the sex of the worker, and that the eventual outcome should be a single award rate for an occupational group or classification payable to both male and female employees.

Minimum Wage Rates

The basic wage, as the term implies, establishes a 'base' to which additions may be made to provide rates actually payable in certain industries and occupations and in particular areas. Minimum rates, incorporating these additional payments, may be prescribed by awards of The Western Australian Industrial Commission, or may be negotiated by industrial agreement. These agreements are registered with the Commission and are binding upon the parties. The additions made to the basic wage rate take the form of 'margins' and 'loadings'. Margins are amounts awarded to particular classifications of employees for features attaching to their work, such as skill, experience, arduousness and other like factors. Loadings are amounts awarded for various kinds of disabilities associated with the performance of work, or to meet particular circumstances. They include payments such as industry loadings and other general loadings prescribed in awards, determinations or agreements for the occupation concerned.

Awards of the Australian Conciliation and Arbitration Commission take cognisance of particular features or circumstances such as those mentioned above but no longer contain identifiable components in the form of basic wage, margins, and loadings (see letterpress *Commonwealth Basic Wage* on page 475).

In its decision of 8 July 1966 in the Basic Wage, Margins and Total Wages Cases of 1966, the Commonwealth Conciliation and Arbitration Commission announced that it intended to grant relief to low-wage earners by inserting a provision in awards prescribing a minimum wage. The provisions inserted in the awards state that no adult male employee shall be paid at less than the prescribed minimum rates as ordinary rates of pay in respect of the ordinary hours of work prescribed in the award. The minimum weekly wage rates prescribed were the appropriate basic wages plus \$3.75 per week. As a result of this decision the minimum weekly wage as prescribed in Federal awards for adult male workers in Perth became \$36.55, with effect from the beginning of the first pay-period commencing on or after 11 July 1966.

In its decision in the National Wage Case 1974, the Australian Conciliation and Arbitration Commission, in prescribing a minimum wage for adult females, also made provision for parity between the minimum wage for adult males and adult females to be achieved in three stages: 85 per cent of the male minimum wage to be paid to adult females from the beginning of the first pay-period commencing on or after 23 May 1974; 90 per cent from the beginning of the pay-period in which 30 September 1974 falls; and 100 per cent from the beginning of the pay-period in which 30 June 1975 occurs. The minimum weekly wage payable to adult males was increased from \$60.10 to \$68.10 with effect from the beginning of the first pay-period commencing on or after 23 May 1974. The minimum weekly wage payable to adult females from that date was therefore \$57.90 (i.e. $0.85 \times \$68.10$).

Reference is made on pages 477 and 478 to minimum wage rates prescribed under awards of The Western Australian Industrial Commission. In terms of orders operative from 31 May 1974, the Commission introduced a minimum wage of \$57.90 per week for adult females employed under specified awards and agreements.

The following table shows variations in the minimum weekly wage rates applicable to adult workers under Federal and State awards.

Further information relating to minimum weekly wage rates in other Australian States appears in the publication *Wage Rates and Earnings* issued monthly by the Commonwealth Statistician, Canberra.

**MINIMUM WEEKLY WAGE RATES
FEDERAL AND STATE AWARDS
(\$)**

Federal awards		State awards	
Perth		Western Australia	
Date of operation (a)	Amount	Date of operation	Amount
Adult males—		Adult males—	
1966—11 July	36.55	1967— 5 April (a)	36.55
1967— 1 July	37.55	1967— 1 July (a)	37.55
1968—25 October	38.90	1968—25 October (a)	38.90
1969—19 December	42.40	1969—19 December (a)	42.40
1971— 1 January	46.40	1970—26 October	49.00
1972—19 May	51.10	1971—26 October	51.50
1973—29 May	60.10	1972—26 June	53.50
1974—23 May	68.10	1973— 8 June	57.00
		17 September	61.50
		1974—31 May	69.00
Adult females—		Adult females—	
1974—23 May	57.90	1974—31 May	57.90

(a) Rates operative from beginning of first pay-period commencing on or after the date shown.

The statistics shown in the following table, which refers to Western Australian experience, relate generally to wages and hours prescribed in awards or determinations of the Federal and State industrial authorities or in agreements registered with them.

The minimum wage rates and index numbers shown in the table embrace a representative range of occupations and are based on the occupation and industry structures in Australia in 1954. The weekly wage rates given in the table, and used in the compilation of the indexes, represent the lowest rates payable for a full week's work (excluding overtime), as prescribed in representative industrial awards, determinations and agreements. The hourly wage rates are obtained by relating the weekly wage rates and the weekly hours of work prescribed in awards, etc. The rural industries are excluded from the table, because of coverage difficulties.

Because the indexes are designed to measure movements in prescribed minimum rates of 'wages' as distinct from 'salaries', those awards, determinations and agreements which relate solely or mainly to salary-earners are excluded.

The wage rates shown should not be regarded as actual current averages, but as indexes expressed in money terms, indicative of trends.

A more detailed description of the minimum wage rates index and more extensive tables are published by the Commonwealth Statistician in the monthly bulletin *Wage Rates and Earnings*.

A table showing minimum rates of wages payable in a selection of occupations in Western Australia at 30 June 1972 appears in *Statistics of Western Australia—Labour and Prices: 1972* (pages 5-7).

WEIGHTED AVERAGE MINIMUM WEEKLY AND HOURLY WAGE RATES

Date	Weekly wage rates		Hourly wage rates		Index numbers (a)			
	Adult males	Adult females (b)	Adult males (c)	Adult females (b)	Weekly wage rates		Hourly wage rates	
					Males	Females (b)	Males (c)	Females (b)
End of June—	\$	\$	cents	cents				
1969	48.53	34.66	121.32	87.12	171.8	174.1	171.5	173.6
1970	51.09	37.14	127.56	93.35	180.9	186.5	180.3	186.1
1971	58.07	41.61	145.24	104.60	205.6	209.0	205.3	208.5
1972	*63.89	*49.21	*159.62	*123.70	*226.2	*247.2	*225.6	*246.6
1973 (d)	72.16	57.73	180.49	145.12	255.5	290.0	255.1	289.3

(a) Base of series : weighted average weekly wage rate—Australia, 1954 = 100. (b) Excludes mining and quarrying, and building and construction. (c) Excludes shipping and stevedoring. (d) Preliminary figures; subject to revision.

*Revised.

Average Weekly Earnings

The estimates shown in the following table are part of a series first published for the September quarter 1966 and are not comparable with those published in respect of earlier periods. A description of the method used in compiling the series is given in the *Official Year Book of the Commonwealth of Australia*: No. 57, 1971 (pages 1065-7).

Statistics of average weekly earnings are derived from information concerning employment and wages and salaries as recorded on Pay-roll Tax returns, from other direct collections, and from estimates of the unrecorded balance. The figures relate to civilians only.

Particulars of wages and salaries paid are not available separately for males and females from these sources. Average weekly earnings have therefore been calculated for each State in terms of male units, i.e. total male employees plus a proportion of female employees, the proportion being determined by the estimated ratio of female to male average earnings.

AVERAGE WEEKLY EARNINGS (a) PER EMPLOYED MALE UNIT: AUSTRALIAN STATES (\$)

Year	N.S.W. (b)	Vic.	Qld	S.A. (c)	W.A.	Tas.	Aust.
1966-67	63.50	63.90	57.10	57.60	59.20	58.40	61.70
1967-68	67.00	67.60	60.20	61.10	63.90	61.90	65.30
1968-69	72.70	72.10	64.30	65.20	68.80	65.60	70.20
1969-70	78.80	78.10	69.20	70.90	75.50	70.70	76.10
1970-71	87.70	86.10	77.70	78.20	84.80	78.40	84.50
1971-72 (d)	96.50	93.60	86.90	86.70	93.60	86.90	93.00
1972-73	105.20	102.50	96.90	94.30	99.00	94.50	101.50

(a) See letterpress immediately following table. (b) Includes Australian Capital Territory. (c) Includes Northern Territory. (d) Break in series; see letterpress immediately preceding table on page 499. Trainee teachers (and their allowances) are excluded from the calculation of average weekly earnings from the September quarter of 1971. The effect of this exclusion was to increase the average in all States by about 30 cents.

The figures used in calculating the averages shown in the table comprise: award and over-award wages and salaries; earnings of employees not covered by awards; overtime earnings; bonuses and allowances; commissions; directors' fees; and payments made retrospectively or in advance during the years specified. Earnings of part-time as well as full-time employees, and of juniors as well as adults, are included. It is important to bear in mind that the figures relate to the whole civilian wage and salary earner field and therefore comprise payments to all grades of employees from junior workers to persons at the highest levels of executive and administrative activity.

Quarterly figures corresponding to those shown in the table are published by the Commonwealth Statistician in the bulletins *Average Weekly Earnings and Wage Rates and Earnings*, in the *Monthly Review of Business Statistics* and in the *Quarterly Summary of Australian Statistics*.

SURVEY OF WEEKLY EARNINGS AND HOURS

Sample surveys in respect of most private employers subject to Pay-roll Tax (i.e. those paying more than \$400 per week in wages and salaries) have been conducted as at the last pay-period in October during recent years.

In addition to obtaining data for the calculation of average weekly earnings, average weekly hours paid for, and average hourly earnings, the surveys obtained information on overtime and ordinary-time earnings and hours for full-time employees (other than managerial, etc. staff).

The results of the surveys are based on returns from stratified random samples of private employers subject to Pay-roll Tax. Employees in rural industry and in private domestic service are excluded because most employers in these industries are not subject to Pay-roll Tax. Also excluded from the surveys are employees of government and semi-government authorities, and employees of religious, benevolent and other similar organisations exempt from Pay-roll Tax.

Definitions of the terms used in the following tables may be found in the publication *Survey of Weekly Earnings and Hours, October 1972*, published by the Commonwealth Statistician, Canberra.

The two following tables refer to the results for Western Australia.

**AVERAGE EARNINGS AND HOURS (a)—PRIVATE EMPLOYMENT
ALL INDUSTRY GROUPS (b)**

Particulars	October—				
	1968	1969	1970	1971	1972
Average weekly earnings (c)—	\$	\$	\$	\$	\$
Adult males	73.00	77.30	85.20	96.10	98.50
Junior males	31.20	34.30	37.90	39.60	41.80
Adult females	38.60	43.40	47.40	52.00	57.30
Junior females	23.90	27.30	30.00	33.70	36.00
Average weekly hours paid for (c)—	hrs	hrs	hrs	hrs	hrs
Adult males	45.8	45.5	45.4	45.8	44.2
Junior males	41.5	41.8	41.9	41.9	41.0
Adult females	39.5	39.9	39.7	39.7	39.9
Junior females	39.4	39.6	39.0	38.9	38.9
Average hourly earnings (c)—	\$	\$	\$	\$	\$
Adult males	1.59	1.70	1.88	2.10	2.23
Junior males	0.75	0.82	0.90	0.94	1.02
Adult females	0.98	1.09	1.19	1.31	1.44
Junior females	0.61	0.69	0.77	0.87	0.93

(a) Excludes managerial, professional and higher supervisory staff. Full-time employees only are included. (b) Excludes rural industry and private domestic service. (c) Last pay-period in October.

The following table analyses total earnings for Western Australia to show their over-time component in October 1971 and 1972.

**AVERAGE WEEKLY OVERTIME AND ORDINARY-TIME EARNINGS (a)
PRIVATE EMPLOYMENT (b)
(\$)**

Particulars	Average weekly overtime earnings (a)		Average weekly ordinary-time earnings (a)		Average weekly total earnings	
	October—		October—		October—	
	1971	1972	1971	1972	1971	1972
Adult males—						
Manufacturing—						
Founding, engineering, vehicles, etc.	20.00	13.00	73.70	79.10	93.60	92.10
Other	13.20	14.30	70.70	76.00	84.00	90.30
Total Manufacturing	16.20	13.80	72.00	77.30	88.30	91.10
Non-manufacturing	22.80	17.80	77.70	85.20	100.40	103.00
All industry groups (c)	20.50	16.30	75.70	82.20	96.10	98.50
Junior males—all industry groups (c)	4.10	2.90	35.50	38.90	39.60	41.80
Females—all industry groups (c)						
Adult	2.10	2.30	49.90	54.90	52.00	57.30
Junior	0.70	0.70	33.00	35.30	33.70	36.00

(a) Averages for all employees represented in the survey. (b) Excludes managerial, professional and higher supervisory staff. Full-time employees only are included. (c) Excludes rural industry and private domestic service.

HOURS OF WORK AND LEAVE PROVISIONS

Standard Hours of Work. In the fixation of weekly wage rates most industrial tribunals prescribe the number of hours constituting a full week's work for the wages specified.

Following applications for the introduction of a working week of forty hours, in place of the existing general standard of forty-four hours, the Commonwealth Court of Conciliation and Arbitration began hearing evidence in October 1945. In its judgment given on 8 September 1947 the Court granted the reduction to forty hours from the beginning of the first pay-period commencing in January 1948. On 6 November 1947 the Western Australian Court of Arbitration approved that, on application, provision for a working week of forty hours could be incorporated in awards of the Court with effect from 1 January 1948.

The forty-hour week has operated in Australia generally from 1 January 1948 (in New South Wales from 1 July 1947). However, the number of hours constituting a full week's work (excluding overtime) differs between occupations and/or between States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 31 January 1974 were: New South Wales, 39·78; Victoria, 39·97; Queensland, 39·89; South Australia, 39·96; Western Australia, 39·85; Tasmania, 39·93; Australia, 39·87. Corresponding figures for adult female workers at 31 January 1974 were: New South Wales, 39·53; Victoria, 39·81; Queensland, 39·70; South Australia, 39·77; Western Australia, 39·78; Tasmania, 39·63; Australia, 39·67.

Annual Leave and Public Holidays. On 18 April 1963 the Commonwealth Conciliation and Arbitration Commission gave a judgment which had the effect of granting a general increase from two weeks to three weeks in the period of paid annual leave for employees covered by Federal awards.

In December 1971, the Commission announced its findings on claims for (i) an increase from three weeks to four weeks in the standard period of annual leave, (ii) a bonus of an extra week's pay to employees on annual leave, and (iii) an increase in the award amount of weekly payment when on annual leave. The first two claims were rejected and a decision on the third claim was deferred until after the hearing of the National Wage Cases 1971-72. On 7 June 1972 the Commission gave its decision on this claim. It decided that, in general, payments for annual leave should include over-award payments for ordinary hours of work, shift-work premiums, service grants and certain allowances, in addition to normal award rates of pay. For those awards under which the application was made in this case, the date of operation was set as 1 November 1972.

As from 1 January 1973 employees of the Australian Government were granted four weeks' annual leave.

Following a general inquiry concerning annual leave and public holidays, the Western Australian Court of Arbitration in June 1963 adopted three weeks as the new standard for the normal period of annual leave in State awards, with four weeks for seven-day shift workers. Existing awards and agreements which already provided annual leave in excess of this standard were to be examined separately to ascertain whether special circumstances existed to justify leave greater than the normal standard.

In the inquiry the State Government sought a reduction in the number of public holidays and a review of other conditions where these were more favourable than the Court's standard. Private employers opposed any increase in annual leave but, alternatively, submitted that, if there was to be an increase, then the new standard should be two weeks and four days per annum or the number of public holidays in each year should be reduced by one. Both these submissions were rejected and the standard number of public holidays was retained at ten with the provision that, where an award provided for more than ten public holidays a year, that award, unless the union consented to a reduction to ten, would be excluded from the order amending the annual leave provisions until it was established that special circumstances justified the continuance of the greater number of holidays.

In November 1963 the Court refused an application by employers for the right to split the annual leave into two parts, since it decided to follow the decision of most other State tribunals and allow the additional leave in conformity with conditions similar to

those prescribed by the Commonwealth Conciliation and Arbitration Commission. The right to split the leave would be allowed by the Court only in exceptional circumstances, unless all the parties concerned agreed to the inclusion of such a provision.

Long Service Leave. The *Long Service Leave Act, 1958-1973* (State) confers entitlement to long service leave with pay on employees for whom such leave is not otherwise provided. Entitlement accrues only in relation to continuous service with one employer, but continuity of service is not affected by the transfer of a business from one employer to another. Leave of thirteen weeks on ordinary pay is granted in respect of the first fifteen years of service. For each subsequent ten years the entitlement is eight and two-thirds weeks, with *pro rata* conditions applying in the case of death or termination of employment for any reason other than serious misconduct. An employee who has completed at least ten years' service but less than fifteen years is entitled to *pro rata* leave, on the basis of thirteen weeks for fifteen years, if his employment is terminated by death; by the employer for any reason other than serious misconduct; or by the employee on account of sickness, injury, or domestic or other pressing necessity. An employee forfeits his right to long service leave if he engages in alternative employment for reward during the period of leave.

The *Long Service Leave Act Amendment Act, 1973*, which came into operation on 1 March 1974, provides that the 'standard' period of thirteen weeks' leave after fifteen years' service may be varied as the result of an agreement between the Western Australian Employers' Federation (Incorporated) and the Trades and Labor Council of Western Australia or by a determination of The Western Australian Industrial Commission in Court Session.

WORKERS' COMPENSATION

The *Workers' Compensation Act, 1912-1973* (State) provides compensation to workers in Western Australia for injuries suffered in the course of their employment, for death resulting from such injuries, and for disabilities due to specified industrial diseases associated with their employment. The provisions of the Act do not extend to employees of the Australian Government, for whom compensation is provided by the *Compensation (Australian Government Employees) Act 1971-1973*.

Every employer, other than a self-insurer, is required to effect insurance with an approved insurer for the full amount of the liability to pay compensation under the Act to all workers in his employment.

The Act establishes a Workers' Compensation Board of three members, including a chairman, appointed by the Governor. The Chairman, who has the status of Judge, must be a legal practitioner of not less than eight years' practice and standing. Of the remaining members, one is nominated by the Western Australian Employers' Federation (Incorporated), and one by the Trades and Labor Council of Western Australia. The Board has exclusive jurisdiction to inquire into, hear, and determine all questions and matters arising under the Act, and its actions and decisions are final, except that where any question of law arises in any proceedings before the Board, it may state a case for the decision of the Full Court of the Supreme Court.

The amounts of payments, allowances and benefits under the Act are calculated by reference to a 'prescribed amount' as defined in section 5 of the Act. The prescribed amount is the sum ascertained by multiplying by 208 the estimate, as published each year by the Commonwealth Statistician, of the average weekly earnings per employed male unit for the June quarter in Western Australia. In the following paragraphs the amounts shown are those which were in operation at 31 December 1973, the prescribed amount at that date being \$21,819 (*i.e.* 208 x \$104.90).

Where total incapacity for work results from the injury the weekly payment is an amount equal to the weekly earnings computed as being the amount of the ordinary wage or salary (including any over-award payment) which the worker would have received for the ordinary hours he would have worked had he not been incapacitated as a result of

the injury. In the case of partial incapacity the weekly payment is the amount by which the weekly earnings so computed exceed the weekly amount which the worker is earning or is able to earn in some suitable employment or business after the accident.

The total liability of the employer in respect of weekly payments is limited to \$21,819. Additional compensation is payable up to a maximum of 10 per cent of the prescribed amount, *i.e.* \$2,181.90 (or more, if the Board finds that, in particular circumstances, this amount is inadequate) for expenses incurred in respect of first aid and ambulance services, medicines, medical or surgical attendance, hospital treatment and the like. In the event of the death of the worker, funeral expenses are compensable up to a maximum of \$250.

The Act provides for compensation in the form of a lump-sum payment, up to a maximum of \$21,819, in respect of specified injuries resulting in such disabilities as loss of sight, hearing or mental powers, or loss of a limb or limbs. Lump-sum payments are made only by election of the injured worker, after which all right to weekly payments ceases.

Where death results from the injury and the worker leaves any dependants who were wholly dependent on his earnings, the maximum amount of compensation is 85 per cent of the prescribed amount, *i.e.* \$18,546.15, together with an additional weekly payment of \$7.50 in respect of each dependent child or step-child. It is provided that if a worker leaves a widow, a mother, or a child or step-child wholly dependent on his earnings, the minimum payment shall be 25 per cent of the prescribed amount, *i.e.* \$5,454.75. If a worker dies leaving no dependants, reasonable expenses in connection with medical attendance and burial are payable to the person by whom the expenses were properly incurred.

Disability or death caused by certain specified industrial diseases due to the nature of a worker's employment is compensable at the same rates and under the same conditions as those applying in the case of injury.

INDUSTRIAL ACCIDENTS

The collection of information required for detailed analysis of industrial accidents occurring in Western Australia commenced on 1 July 1961. From that date all insurers and self-insurers have been required to submit a report to the Workers' Compensation Board in respect of each claim for workers' compensation as soon as the claim is closed. Only accidents coming within the scope of the Workers' Compensation Act are included in the statistics, which therefore exclude industrial accidents resulting in the death of, or injury to, self-employed persons and all Australian Government employees. As the statistics relate only to accidents, particulars of cases of industrial disease are excluded.

With few exceptions, an accident to an employee while travelling between his place of residence and place of employment was not compensable in Western Australia until 14 December 1964, when the *Workers' Compensation Act Amendment Act, 1964* came into operation. From that date, the compensation provisions have been extended generally to include such cases. These cases are not, however, included in the statistics which are intended to cover only those accidents occurring at the work site or in the course of the worker's normal duties. (During the year ended 30 June 1972, 279 claims were reported closed in respect of 'journey' cases involving loss of work for one week or more. The total time lost was 1,926 weeks and the cost of claims amounted to \$116,017.)

For the purpose of the statistics, each claim is regarded as a separate industrial accident and data are prepared from reports of claims closed during the year under review. The item 'cost of claims' refers to *total* payments made (principally in the form of compensation for loss of wages, medical expenses, and lump-sum settlements) in respect of claims closed during the year, and therefore does not necessarily represent amounts actually paid in that year. Similarly, 'time lost' refers to *total* time lost (*i.e.* from date of injury) in respect of claims closed during the year.

The tables in this section include particulars of industrial accidents resulting in death or absence from work of at least one week, *i.e.* a week of five working days. In respect of reopened claims, the additional time lost and additional costs are included in the tables

but, to avoid duplication, such cases (of which there were 1,838 in 1971-72) have been excluded from the numbers of accidents shown.

INDUSTRIAL ACCIDENTS (a)—NUMBER, TIME LOST, AND COST OF CLAIMS (b)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Number of accidents—					
Fatal	18	28	36	40	28
Non-fatal	13,812	13,859	13,997	15,555	15,773
Time lost (c)—					
Total	56,469	53,436	54,087	68,206	68,324
Average per accident	4.1	3.9	3.9	4.4	4.3
Cost of claims (b)—					
Fatal accidents	\$'000 80	158	267	239	180
Non-fatal accidents	\$'000 3,287	3,310	3,618	4,653	5,075
Total	\$'000 3,367	3,468	3,884	4,892	5,255
Average per non-fatal accident	\$ 238	239	258	299	322

(a) Accidents resulting in absence from work of one week or more. (b) Refers to total payments made (principally compensation for wages lost, medical expenses, and lump-sum settlements) in respect of claims closed during the year, and therefore not necessarily to amounts actually paid in that year. (c) Total time lost (i.e. from date of injury) in respect of claims closed during the year.

INDUSTRIAL ACCIDENTS (a)—NUMBER, TIME LOST, AND COST OF CLAIMS (b) INDUSTRY GROUPS : 1971-72

Industry group	Fatal accidents		Non-fatal accidents			
	Number	Cost of claims (b)	Number	Per cent of total	Time lost (c)	Cost of claims (b)
		\$'000			weeks	\$'000
Primary production—						
Mining and quarrying	2	12	951	6.0	5,808	417
Other	3	39	1,014	6.4	4,214	337
Manufacturing	3	24	5,977	37.9	23,523	1,821
Electricity, gas, water and sanitary services (d)	2	1	351	2.2	1,956	139
Building and construction	4	25	2,863	18.2	12,674	978
Transport, storage and communication	7	33	1,320	8.4	6,523	516
Finance and property .....	....	....	18	0.1	64	8
Commerce	4	44	1,554	9.9	5,608	375
Public authority (n.e.i.) and defence services ; community and business services	2	(e)	958	6.1	4,816	288
Amusement, hotels, cafes, personal service, etc.	1	2	767	4.9	3,138	196
Other .....	....	....	....	....	....	....
Total	28	180	15,773	100.0	68,324	5,075

(a) Accidents resulting in absence from work of one week or more. (b) See note (b) to previous table. (c) See note (c) to previous table. (d) Production, supply and maintenance. (e) Less than \$500.

INDUSTRIAL ACCIDENTS (a)—DURATION OF TIME LOST : 1971-72

Duration of time lost (weeks)		Males		Females		Total	
		Number	Time lost (weeks)	Number	Time lost (weeks)	Number	Time lost (weeks)
1 and under	2	6,791	8,658	940	1,190	7,731	9,848
2	4	3,734	9,772	493	1,275	4,227	11,047
4	6	1,283	6,053	108	518	1,391	6,571
6	8	730	4,917	83	565	813	5,481
8	13	745	7,301	91	929	836	8,230
13	26	446	7,812	62	1,080	508	8,892
26	52	140	4,835	17	644	157	5,479
52	104	68	4,629	9	647	77	5,276
104	156	14	1,754	4	536	18	2,290
156 and over	....	12	2,807	3	775	15	3,582
Total .....	....	13,963	58,538	1,810	8,158	15,773	66,696
Reopened claims (b) .....	....	....	1,391	....	237	....	1,628
Total .....	....	13,963	59,929	1,810	8,395	15,773	68,324

(a) Non-fatal accidents resulting in absence from work of one week or more. (b) Additional time lost which cannot be allocated to appropriate groups. The number of reopened claims reported was 1,838.

The second table on page 486 contains an analysis, according to industry group, of industrial accidents in Western Australia for the year ended 30 June 1972. Accidents have been classified according to the Classification of Industries used in the 1966 Census of Population.

The final table on page 486 gives a classification, according to duration of time lost, of industrial accidents in Western Australia for the year ended 30 June 1972.

Statistics in greater detail, as well as analyses according to additional characteristics, are available in the publications, *Industrial Accidents (Series A)*, which relates to accidents resulting in death or absence from work for one day or more, and *Industrial Accidents (Series B)*, relating to accidents resulting in death or absence from work for one week or more. These publications, which are in mimeographed form, are issued annually by the Western Australian Office of the Australian Bureau of Statistics.

Chapter X—continued

Part 2—Employment

NOTE. In addition to the employment data appearing in this Part, references to the numbers of persons engaged in particular activities are to be found elsewhere in the Year Book. In Chapter V, for example, Part 1—*Education* shows numbers engaged in teaching, Part 3—*Health Services, Hospitals, and Care of the Aged and Disabled* contains details of hospital staffs, and employment in building appears in Part 4—*Housing and Building*. In Chapter VIII, Part 1—*Primary Production* gives employment at mines and in fishing, and Part 2—*Secondary Production* includes tables relating wholly, or in part, to employment in factories. Chapter IX, Part 3—*Transport* shows numbers engaged in various types of transport undertakings.

Reference is made on page 121 to the repeal, with effect from 10 August 1967, of section 127 of the Australian Constitution. As a consequence of this repeal, particulars derived from the 1971 Census refer to total population (i.e. including Aborigines). Persons having Aboriginal blood to a degree greater than one-half had previously been excluded from census tabulations in accordance with the requirements of the section now repealed.

The most detailed and comprehensive statistics of employment of the population are those which are derived from the periodic Population Census. Among the most useful of the tabulations based on these enumerations are those which classify the population according to occupational status, industry, and occupation.

THE LABOUR FORCE

The term *labour force*, as used in the 1971 Census tabulations, replaces the term *work force* previously used. The labour force comprises persons aged fifteen years and over who were in one of the following categories: those who worked for payment or profit at any time during the week preceding the census enumeration; those who had a job from which they were temporarily absent; those who were temporarily laid off without pay for the whole of the week; and those who did not work, did not have a job and were actively looking for work.

Persons helping but not receiving wages or salary who usually worked less than fifteen hours per week are excluded from the labour force. Bonded trainees (including trainee teachers) and cadets engaged in full-time study at educational institutions are also excluded, even though the institution is conducted by their employer.

The unemployed members of the labour force are those persons who did no work during the week preceding the census enumeration and either looked for work (having no job) or were temporarily laid off from a job.

The approach adopted at the 1971 Census in determining the labour force conforms closely to the recommendations of the Eighth International Conference of Labour Statisticians held at Geneva in 1954 and to the approach used at the 1966 Census. Accordingly, any labour force activity, however little, during the week preceding the enumeration results in the person being counted in the labour force. Thus many persons whose main activity is not a labour force one (e.g. housewife, full-time student) are drawn into the labour force by virtue of part-time or occasional labour force activity in that week. On the other hand, the definition excludes persons who may frequently or usually participate in the labour force but who, during that week, happened to have withdrawn from the labour force.

The comprehensive tables resulting from the 1971 Census include detailed analyses of the labour force according to such characteristics as age, marital status, birthplace, occupational status, industry and occupation. Only some of these tables, in condensed form, have been included in this Chapter. The reader requiring greater detail is referred to the census bulletins published by the Commonwealth Statistician, Canberra.

Population classified according to Occupational Status

OCCUPATIONAL STATUS—CENSUS, 30 JUNE 1971

Occupational status	Males	Females	Persons	Percentage of population		
				Males	Females	Persons
In labour force—						
Employed—						
Employer	20,027	5,155	25,182	3.79	1.03	2.44
Self-employed	27,202	6,344	33,546	5.14	1.27	3.26
Employee on wage or salary	246,028	113,676	359,704	46.50	22.67	34.91
Helper, unpaid	1,002	2,296	3,298	0.19	0.46	0.32
Total employed	294,259	127,471	421,730	55.62	25.42	40.93
Unemployed—						
Looking for first job	687	589	1,276	0.13	0.12	0.12
Other unemployed	4,674	2,702	7,376	0.88	0.54	0.72
Total unemployed	5,361	3,291	8,652	1.01	0.66	0.84
Total in labour force	299,620	130,762	430,382	56.63	26.08	41.77
Not in labour force—						
Usual major activity—						
Working in a job	14,398	4,329	18,727	2.72	0.86	1.82
Home duties		185,768	185,768		37.05	18.03
Child not yet at school	59,131	55,990	115,121	11.18	11.17	11.17
Child at school	113,050	105,854	218,904	21.37	21.11	21.24
Full-time student	6,815	5,498	12,313	1.29	1.10	1.19
Other	36,052	13,202	49,254	6.81	2.63	4.78
Total not in labour force	229,446	370,641	600,087	43.37	73.92	58.23
TOTAL POPULATION	529,066	501,403	1,030,469	100.00	100.00	100.00

OCCUPATIONAL STATUS—STATES AND TERRITORIES: CENSUS, 30 JUNE 1971

Occupational status	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Australia
MALES									
In labour force—									
Employed—									
Employer.....	72,921	57,778	38,202	19,468	20,027	6,841	939	1,616	217,792
Self-employed	97,423	86,545	48,599	29,713	27,202	8,442	888	1,610	300,422
Employee on wage or salary	1,140,731	828,082	412,867	275,292	246,028	90,627	26,715	38,330	3,058,672
Helper, unpaid	2,880	2,584	1,785	1,009	1,002	277	39	64	9,640
Total employed	1,313,955	974,989	501,453	325,482	294,259	106,187	28,581	41,620	3,586,526
Unemployed—									
Looking for first job	2,880	2,187	1,227	868	687	226	81	81	8,237
Other unemployed	15,585	11,891	6,644	3,814	4,674	1,560	374	334	44,876
Total unemployed	18,465	14,078	7,871	4,682	5,361	1,786	455	415	53,113
Total in labour force	1,332,420	989,067	509,324	330,164	299,620	107,973	29,036	42,035	3,639,639
Not in labour force	974,790	760,994	412,341	255,887	229,446	88,469	19,591	31,554	2,773,072
Total males	2,307,210	1,750,061	921,665	586,051	529,066	196,442	48,627	73,589	6,412,711
FEMALES									
In labour force—									
Employed—									
Employer.....	19,333	16,338	10,674	5,832	5,155	1,727	243	344	59,646
Self-employed	24,732	22,584	13,128	8,302	6,344	1,892	221	434	77,637
Employee on wage or salary	563,896	429,310	181,439	135,712	113,676	39,649	9,474	21,142	1,494,298
Helper, unpaid	6,942	5,953	3,934	2,240	2,296	760	67	129	22,321
Total employed	614,903	474,185	209,175	152,086	127,471	44,028	10,005	22,049	1,653,902
Unemployed—									
Looking for first job	2,709	2,068	1,118	927	589	277	46	90	7,824
Other unemployed	10,097	7,671	4,305	2,746	2,702	984	208	410	29,123
Total unemployed	12,806	9,739	5,423	3,673	3,291	1,261	254	500	36,947
Total in labour force	627,709	483,924	214,598	155,759	130,762	45,289	10,259	22,549	1,690,849
Not in labour force	1,666,261	1,268,366	690,802	431,897	370,641	148,682	27,504	47,925	4,652,078
Total females	2,293,970	1,752,290	905,400	587,656	501,403	193,971	37,763	70,474	6,342,927

**LABOUR FORCE—EMPLOYMENT STATUS, MARITAL STATUS AND AGE
CENSUS, 30 JUNE 1971**

Employment status and marital status	Age last birthday (years)							Total
	15-19	20-24	25-34	35-44	45-54	55-64	65 and over	

MALES

Employed—								
Never married	28,312	25,793	13,893	5,281	3,445	2,264	568	79,556
Now married	618	16,089	55,699	52,674	42,936	28,147	5,498	201,661
Widowed	7	23	108	301	758	1,227	682	3,106
Other marital status (a)	10	468	2,221	2,640	2,602	1,657	338	9,936
Total	28,947	42,373	71,921	60,896	49,741	33,295	7,086	294,259
Unemployed—								
Never married	1,084	942	457	154	111	57	13	2,818
Now married	21	270	609	499	399	277	68	2,143
Widowed	—	2	5	9	18	21	19	74
Other marital status (a)	1	24	74	81	81	56	9	326
Total	1,106	1,238	1,145	743	609	411	109	5,361
Total in labour force—								
Never married	29,396	26,735	14,350	5,435	3,556	2,321	581	82,374
Now married	639	16,359	56,308	53,173	43,335	28,424	5,566	203,804
Widowed	7	25	113	310	776	1,248	701	3,180
Other marital status (a)	11	492	2,295	2,721	2,683	1,713	347	10,262
TOTAL IN LABOUR FORCE	30,053	43,611	73,066	61,639	50,350	33,706	7,195	299,620

FEMALES

Employed—								
Never married	23,143	11,769	4,411	1,707	1,400	1,088	335	43,853
Now married	1,437	11,056	18,095	21,315	15,155	5,013	546	72,617
Widowed	1	19	173	571	1,583	1,751	616	4,714
Other marital status (a)	47	535	1,486	1,671	1,627	806	115	6,287
Total	24,628	23,379	24,165	25,264	19,765	8,658	1,612	127,471
Unemployed—								
Never married	809	386	108	35	14	12	4	1,368
Now married	97	412	481	374	212	58	12	1,646
Widowed	—	—	5	17	35	20	17	94
Other marital status (a)	4	33	48	41	41	13	3	183
Total	910	831	642	467	302	103	36	3,291
Total in labour force—								
Never married	23,952	12,155	4,519	1,742	1,414	1,100	339	45,221
Now married	1,534	11,468	18,576	21,689	15,367	5,071	558	74,263
Widowed	1	19	178	588	1,618	1,771	633	4,808
Other marital status (a)	51	568	1,534	1,712	1,668	819	118	6,470
TOTAL IN LABOUR FORCE	25,538	24,210	24,807	25,731	20,067	8,761	1,648	130,762

PERSONS

Employed—								
Never married	51,455	37,562	18,304	6,988	4,845	3,352	903	123,409
Now married	2,055	27,145	73,794	73,989	58,091	33,160	6,044	274,278
Widowed	8	42	281	872	2,341	2,978	1,298	7,820
Other marital status (a)	57	1,003	3,707	4,311	4,229	2,463	453	16,223
Total	53,575	65,752	96,086	86,160	69,506	41,953	8,698	421,730
Unemployed—								
Never married	1,893	1,328	565	189	125	69	17	4,186
Now married	118	682	1,090	873	611	335	80	3,789
Widowed	—	2	10	26	53	41	36	168
Other marital status (a)	5	57	122	122	122	69	12	509
Total	2,016	2,069	1,787	1,210	911	514	145	8,652
Total in labour force—								
Never married	53,348	38,890	18,869	7,177	4,970	3,421	920	127,595
Now married	2,173	27,827	74,884	74,862	58,702	33,495	6,124	278,067
Widowed	8	44	291	898	2,394	3,019	1,334	7,988
Other marital status (a)	62	1,060	3,829	4,433	4,351	2,532	465	16,732
TOTAL IN LABOUR FORCE	55,591	67,821	97,873	87,370	70,417	42,467	8,843	430,382

(a) Comprises the categories *Permanently separated* and *Divorced*.

Classification according to Industry

For census purposes, industry may be defined as the *branch of productive activity, business or service carried out by the establishment in which a person is employed*. It is concerned with the activity of persons, firms or businesses considered as a group producing the same commodity, performing the same process or providing the same service. All persons engaged in any such branch of economic activity are classified industrially as belonging to that particular branch irrespective of their personal occupation within the industry. Examples are: *Mining*, which includes, in addition to miners and prospectors, such persons as laboratory technicians, transport workers and office staff employed by mining companies; *Water Transport*, which covers staff members of shipping companies and agencies, as well as ships' crews; and professional activities such as law and architecture which include not only qualified practitioners but also persons employed by them as, for example, receptionists, law clerks and draftsmen.

Classification according to industry at the 1971 Census has been made on the basis of the 1969 preliminary edition of the *Australian Standard Industrial Classification*, prepared by the Commonwealth Statistician, Canberra. For the Population Census an 'undefined' category was added to certain Divisions of the classification to facilitate the coding of imprecise or generalised descriptions of industrial activities on the census schedules. The classification divides the labour force into thirteen Divisions which are in turn divided into Sub-Divisions, Groups and Classes.

In the table below, the employed population is classified according to occupational status within each of the thirteen industry divisions. The table on page 492 gives a classification according to industry divisions and the principal sub-divisions, and a geographical distribution according to the main industry divisions appears on page 493.

EMPLOYED POPULATION—OCCUPATIONAL STATUS AND INDUSTRY CENSUS, 30 JUNE 1971

Industry division	Occupational status				Total
	Employer	Self-employed	Employee on wage or salary	Helper, unpaid	
MALES					
Agriculture, forestry, fishing and hunting	5,845	13,284	12,832	634	32,595
Mining	65	192	15,239	7	15,503
Manufacturing	1,429	927	49,257	21	51,634
Electricity, gas and water	6	4	4,214	....	4,224
Construction	2,970	4,079	34,791	25	41,865
Wholesale and retail trade	5,234	3,385	39,955	48	48,622
Transport and storage	699	2,351	19,858	13	22,921
Communication	5	13	6,201	1	6,220
Finance, insurance, real estate and business services	1,500	1,050	13,888	25	16,463
Public administration and defence	....	....	15,394	....	15,394
Community services	880	187	17,035	118	18,220
Entertainment, recreation, restaurants, hotels and personal services	1,181	1,075	6,112	31	8,399
Non-classifiable establishments	213	655	11,252	79	12,199
Total males employed	20,027	27,202	246,028	1,002	294,259
FEMALES					
Agriculture, forestry, fishing and hunting	1,188	2,621	1,854	1,050	6,713
Mining	9	14	1,532	3	1,558
Manufacturing	319	250	11,019	52	11,640
Electricity, gas and water	....	....	419	....	419
Construction	297	198	1,682	64	2,241
Wholesale and retail trade	2,064	1,817	29,761	293	33,935
Transport and storage	123	197	2,432	35	2,787
Communication	2	8	2,034	....	2,044
Finance, insurance, real estate and business services	202	275	11,083	36	11,596
Public administration and defence	....	....	6,031	....	6,031
Community services	142	308	28,839	376	29,665
Entertainment, recreation, restaurants, hotels and personal services	783	512	12,695	109	14,099
Non-classifiable establishments	26	144	4,295	278	4,743
Total females employed	5,155	6,344	113,676	2,296	127,471

EMPLOYED POPULATION—INDUSTRY: CENSUS, 30 JUNE 1971

Industry division and sub-division (a)	Males	Females	Persons	
			Number	Per cent of total
Agriculture, forestry, fishing and hunting—				
Agriculture	27,870	6,413	34,283	8.13
Other and undefined	4,725	300	5,025	1.19
Total—Agriculture, forestry, fishing and hunting	32,595	6,713	39,308	9.32
Mining—				
Metallic minerals	10,857	751	11,608	2.75
Other and undefined	4,646	807	5,453	1.29
Total—Mining	15,503	1,558	17,061	4.05
Manufacturing—				
Food, beverages and tobacco	8,139	3,646	11,785	2.79
Wood, wood products and furniture (except sheet metal)	7,183	969	8,152	1.93
Paper and paper products, printing and publishing	3,957	1,538	5,495	1.30
Glass, clay and other non-metallic mineral products	4,251	426	4,677	1.11
Basic metal products	4,898	345	5,243	1.24
Fabricated metal products	7,061	955	8,016	1.90
Transport equipment	5,310	232	5,542	1.31
Other industrial machinery and equipment and household appliances	5,818	856	6,674	1.58
Other and undefined	5,017	2,673	7,690	1.82
Total—Manufacturing	51,634	11,640	63,274	15.00
Electricity, gas and water	4,224	419	4,643	1.10
Construction—				
General construction	26,667	1,328	27,995	6.64
Special trade contracting	14,194	899	15,093	3.58
Total—Construction (b)	41,865	2,241	44,106	10.46
Wholesale and retail trade—				
Wholesale trade	21,537	8,081	29,618	7.02
Retail trade	27,073	25,845	52,918	12.55
Total—Wholesale and retail trade (b)	48,622	33,935	82,557	19.58
Transport and storage—				
Road transport	10,228	1,340	11,568	2.74
Railway transport	4,988	332	5,320	1.26
Water transport	4,061	178	4,239	1.01
Other and undefined	3,644	937	4,581	1.09
Total—Transport and storage	22,921	2,787	25,708	6.10
Communication	6,220	2,044	8,264	1.96
Finance, insurance, real estate and business services—				
Finance and investment	5,230	4,197	9,427	2.24
Insurance	2,687	1,975	4,662	1.11
Real estate and business services	8,523	5,418	13,941	3.31
Total—Finance, insurance, real estate and business services (b)	16,463	11,596	28,059	6.65
Public administration and defence—				
Public administration	11,427	5,687	17,114	4.06
Defence	3,959	341	4,300	1.02
Total—Public administration and defence (b)	15,394	6,031	21,425	5.08
Community services—				
Health	5,365	17,223	22,588	5.36
Education, libraries, museums and art galleries	7,078	9,677	16,755	3.97
Other and undefined	5,777	2,765	8,542	2.03
Total—Community services	18,220	29,665	47,885	11.35
Entertainment, recreation, restaurants, hotels and personal services—				
Restaurants, hotels and clubs	4,157	8,485	12,642	3.00
Personal services	1,787	3,417	5,204	1.23
Other and undefined	2,455	2,197	4,652	1.10
Total—Entertainment, recreation, restaurants, hotels and personal services	8,399	14,099	22,498	5.33
Non-classifiable establishments	12,199	4,743	16,942	4.02
TOTAL—EMPLOYED POPULATION	294,259	127,471	421,730	100.00

(a) Only those sub-divisions in which more than 4,217 persons (1 per cent of the total) were recorded are shown separately.

(b) Including 'undefined', i.e. persons who could not be accurately assigned to one of the sub-divisions shown.

EMPLOYED POPULATION—INDUSTRY: CENSUS, 30 JUNE 1971
CLASSIFICATION ACCORDING TO STATISTICAL DIVISION

Statistical Division	Primary (including mining)	Manu- factur- ing	Con- struc- tion	Whole- sale and retail trade	Trans- port, storage and com- muni- cation	Com- muni- ty services	Entertain- ment, restaur- ants, hotels, etc. (a)	Other indus- tries (b)	Total (all indus- tries)
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MALES

Perth Statistical Division	6,469	43,476	25,620	38,078	20,079	14,036	5,986	36,511	190,255
Other Divisions—									
South-West	6,361	3,548	3,038	2,758	1,883	889	510	2,415	21,402
Southern Agricultural	5,774	1,077	1,325	1,803	1,086	560	315	1,267	13,207
Central Agricultural	7,164	949	1,761	1,863	1,507	698	300	1,385	15,627
Northern Agricultural (c)	5,648	799	1,551	1,516	1,190	539	256	1,289	12,788
Eastern Goldfields	6,338	640	1,571	1,391	1,056	535	325	1,441	13,297
Central	1,873	76	1,050	103	137	78	55	350	3,722
North-West	1,328	81	533	308	264	270	113	877	3,774
Pilbara	5,165	575	4,472	554	858	174	455	2,112	14,365
Kimberley	1,954	365	937	233	386	433	77	433	4,818
Total	41,605	8,110	16,238	10,529	8,367	4,176	2,406	11,569	103,000
Total, all Divisions	48,074	51,586	41,858	48,607	28,446	18,212	8,392	48,080	293,255
Migratory (d)	24	48	7	15	695	8	7	200	1,004
Total males employed	48,098	51,634	41,865	48,622	29,141	18,220	8,399	48,280	294,259

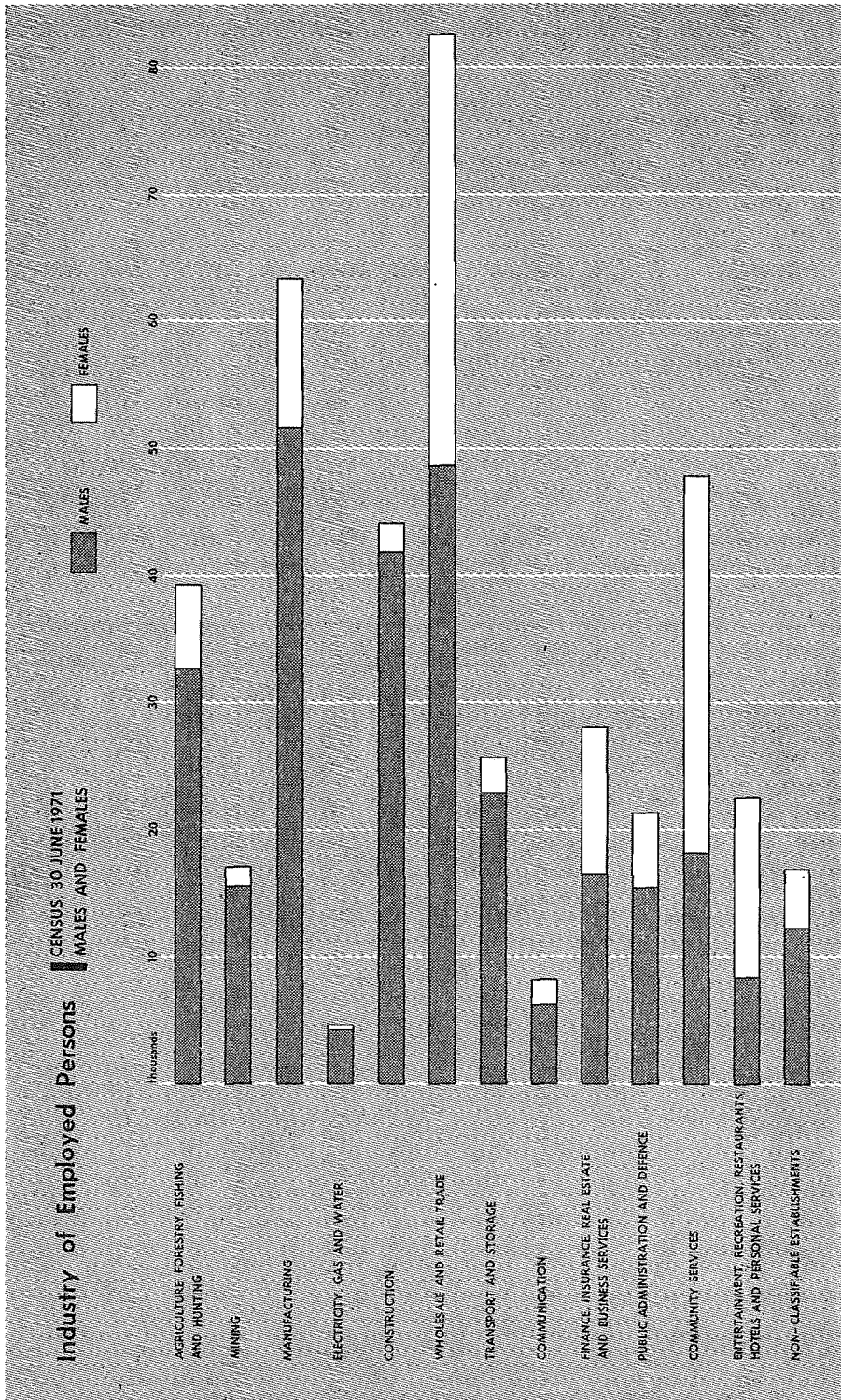
FEMALES

Perth Statistical Division	2,072	10,457	1,743	26,866	3,513	22,866	9,968	18,735	96,220
Other Divisions—									
South-West	1,116	443	87	1,891	256	1,591	906	981	7,271
Southern Agricultural	1,126	235	65	1,134	213	913	511	600	4,797
Central Agricultural	1,377	157	49	1,194	226	1,264	585	672	5,524
Northern Agricultural (c)	889	112	44	1,004	208	908	550	523	4,238
Eastern Goldfields	598	112	55	1,017	149	863	687	557	4,038
Central	132	4	14	56	21	95	96	55	473
North-West	242	16	15	260	46	227	191	225	1,222
Pilbara	309	42	131	329	125	351	427	273	1,987
Kimberley	404	62	35	177	63	561	169	151	1,622
Total	6,193	1,183	495	7,062	1,307	6,773	4,122	4,037	31,172
Total, all Divisions	8,265	11,640	2,238	33,928	4,820	29,639	14,090	22,772	127,392
Migratory (d)	6		3	7	11	26	9	17	79
Total females employed	8,271	11,640	2,241	33,935	4,831	29,665	14,099	22,789	127,471

PERSONS

Perth Statistical Division	8,541	53,933	27,363	64,944	23,592	36,902	15,954	55,246	286,475
Other Divisions—									
South-West	7,477	3,991	3,125	4,649	2,139	2,480	1,416	3,396	28,673
Southern Agricultural	6,900	1,312	1,390	2,937	1,299	1,473	826	1,867	18,004
Central Agricultural	8,541	1,106	1,810	3,057	1,733	1,962	885	2,057	21,151
Northern Agricultural (c)	6,537	911	1,595	2,520	1,398	1,447	806	1,812	17,026
Eastern Goldfields	6,936	752	1,626	2,408	1,205	1,398	1,012	1,998	17,335
Central	2,005	80	1,064	159	158	173	151	405	4,195
North-West	1,570	97	548	568	310	497	304	1,102	4,996
Pilbara	5,474	617	4,603	883	983	525	882	2,385	16,352
Kimberley	2,358	427	972	410	449	994	246	584	6,440
Total	47,798	9,293	16,733	17,591	9,674	10,949	6,528	15,606	134,172
Total, all Divisions	56,339	63,226	44,096	82,535	33,266	47,851	22,482	70,852	420,647
Migratory (d)	30	48	10	22	706	34	16	217	1,083
Total persons employed	56,369	63,274	44,106	82,557	33,972	47,885	22,498	71,069	421,730

(a) Includes Sport and recreation and Personal services. (b) Comprises Electricity, gas and water; Finance, insurance, real estate and business services; Public administration and defence; and Non-classifiable establishments. (c) Includes Houtman Abrolhos (unincorporated). (d) Comprises persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.



Classification according to Occupation

Occupation is defined as the nature of the work which a person performs, and implies *personal* performance. It may be based on the material treated, the process carried out or the type of service rendered by an *individual* worker. Thus the occupation of a person is the kind of work that he or she personally performs, as distinct from industry, which is defined as the *branch of productive activity, business or service carried out by the establishment in which a person is employed* and is not concerned with the nature of personal performance.

The Classification of Occupations used in the tabulation of the 1971 Census data has been adapted from and closely adheres to the principles embodied in the International Standard Classification of Occupations issued by the International Labour Office, Geneva, 1958 and as revised in 1968. The International Standard Classification of Occupations was prepared after extensive discussions and research by world experts in this field to provide an adequate classification framework for countries interested in occupational classification and, at the same time, provide a basis for international comparison of occupational data obtained mainly from Censuses of Population. The Australian Classification of Occupations contains 11 Major Groups, 72 Minor Groups and 367 Occupation Codes. In accordance with the International Standard Classification, occupations have been grouped according to the general similarity of the characteristics of the work which they entail.

Complete descriptions of Major Groups, Minor Groups and Codes, together with a list of occupation titles included under each heading, are contained in the *Classification and Classified List of Occupations—Revised: June 1971*, published by the Commonwealth Statistician, Canberra.

EMPLOYED POPULATION—OCCUPATIONS: CENSUS, 30 JUNE 1971

Major and minor group	Males	Females	Persons
Professional, technical and related workers—			
Architects, engineers and surveyors, professional	1,166	6	1,172
Chemists, physicists, geologists and other physical scientists	935	61	996
Biologists, veterinarians, agronomists and related scientists	630	77	707
Medical practitioners and dentists	1,281	138	1,419
Nurses, including probationers or trainees	334	6,869	7,203
Professional medical workers, n.e.c.	677	442	1,119
Teachers	5,377	6,473	11,850
Clergy and related members of religious orders	848	223	1,071
Law professionals	438	24	462
Artists, entertainers, writers and related workers	1,432	807	2,239
Draftsmen and technicians, n.e.c.	8,239	1,478	9,717
Other professional, technical and related workers	3,166	984	4,150
Total	24,543	17,582	42,125
Administrative, executive and managerial workers—			
Administrative and executive officials, government, n.e.c.	1,196	12	1,208
Employers, workers on own account, directors, managers, n.e.c.	23,483	3,423	26,906
Total	24,679	3,435	28,114
Clerical workers—			
Book-keepers and cashiers	3,403	3,664	7,067
Stenographers and typists		13,144	13,144
Other clerical workers	19,654	23,597	43,251
Total	23,057	40,405	63,462
Sales workers—			
Insurance, real estate salesmen, auctioneers and valuers	2,637	138	2,775
Commercial travellers and manufacturers' agents	3,608	180	3,788
Proprietors and shopkeepers, workers on own account, n.e.c., retail and wholesale trade, salesmen, shop assistants and related workers	9,712	18,328	28,040
Total	15,957	18,646	34,603
Farmers, fishermen, hunters, timber getters and related workers—			
Farmers and farm managers	19,706	3,854	23,560
Farm workers, including farm foremen	12,265	1,985	14,250
Wool classifiers	248	5	253
Hunters and trappers	65	....	65
Fishermen and related workers	1,497	39	1,536
Timber getters and other forestry workers	882	25	907
Total	34,663	5,908	40,571

n.e.c. denotes 'not elsewhere classified'

EMPLOYED POPULATION—OCCUPATIONS: CENSUS, 30 JUNE 1971—continued

Major and minor group	Males	Females	Persons
Miners, quarrymen and related workers—			
Miners, mineral prospectors and quarrymen	4,654	14	4,668
Well drillers, oil, water and related workers	258	1	259
Mineral treaters	738	....	738
Total	5,650	15	5,665
Workers in transport and communication—			
Deck and engine officers, ship	518	1	519
Deck and engine room hands, ship and boatmen	852	....	852
Aircraft pilots, navigators and flight engineers	321	4	325
Drivers and firemen, rail transport	1,091	....	1,091
Drivers, road transport	13,762	1,112	14,874
Guards and conductors, railway	419	....	419
Inspectors, supervisors, traffic controllers and dispatchers, transport	1,864	15	1,879
Telephone, telegraph and related telecommunication operators	354	2,147	2,501
Postmasters, postmen and messengers....	1,720	343	2,063
Workers in transport and communication, n.e.c.	634	132	766
Total	21,535	3,754	25,289
Tradesmen, production-process workers and labourers, n.e.c.—			
Spinners, weavers, knitters, dyers and related workers	244	125	369
Tailors, cutters, furriers and related workers	941	1,770	2,711
Leather cutters, lasters, sewers (except gloves and garments) and related workers	269	221	490
Furnacemen, rollers, drawers, moulders and related metal making and treating workers	1,222	....	1,222
Precision instrument makers, watchmakers, jewellers and related workers	1,095	56	1,151
Toolmakers, metal machinists, mechanics, plumbers and related metal workers	28,332	73	28,405
Electricians and related electrical and electronics workers	10,298	17	10,315
Metal workers, metal and electrical production-process workers, n.e.c.	3,997	489	4,486
Carpenters, woodworking machinists, cabinetmakers and related workers	11,091	310	11,401
Painters and decorators	4,094	33	4,127
Bricklayers, plasterers and construction workers, n.e.c.	10,357	2	10,359
Compositors, printing machinists, engravers, bookbinders and related workers	2,042	519	2,561
Potters, kilnmen, glass and clay formers and related workers	647	77	724
Millers, bakers, butchers, brewers and related food and drink workers	5,461	1,500	6,961
Chemical, sugar and paper production process workers	1,027	96	1,123
Tobacco preparers and tobacco product makers ....	....	1	1
Paper products, rubber, plastic and production process workers, n.e.c.	1,458	484	1,942
Packers, wrappers, labellers	592	1,196	1,788
Stationary engine, excavating and lifting equipment operators	7,374	20	7,394
Storemen and freight handlers	8,348	362	8,710
Labourers, n.e.c.	14,766	638	15,404
Total	113,655	7,989	121,644
Service, sport and recreation workers—			
Fire brigade, police and other protective service workers	3,136	105	3,241
Housekeepers, cooks, maids and related workers	1,774	10,285	12,059
Waiters, bartenders	759	3,481	4,240
Building caretakers, cleaners	2,260	3,668	5,928
Barbers, hairdressers and beauticians	552	1,774	2,326
Launderers, dry cleaners and pressers	262	1,241	1,503
Athletes, sportsmen and related workers	285	83	368
Photographers and camera operators	258	50	308
Undertakers and crematorium workers	71	2	73
Service, sports, recreation workers, n.e.c.	1,640	3,259	4,899
Total	10,997	23,948	34,945
Members of armed services	3,141	86	3,227
Occupation inadequately described or not stated	16,382	5,703	22,085
TOTAL, EMPLOYED POPULATION	294,259	127,471	421,730

n.e.c. denotes 'not elsewhere classified'.

Labour Force Survey

Estimates of the civilian labour force are prepared each quarter by the Commonwealth Statistician. They are based on the results of the population survey, which is carried out on a sample basis throughout Australia in February, May, August and November each year. Selected private dwellings (houses, flats, etc.) and other dwellings (hotels, motels, etc.) are visited in the course of each survey. Information is obtained by means of personal interviews carried out by specially trained enumerators. The results of the survey are published by the Commonwealth Statistician in the quarterly and annual releases entitled *The Labour Force* and in the annual *Labour Report*. All published figures relate to Australia as a whole, and particulars for individual States are not available.

ESTIMATES OF EMPLOYMENT

In addition to employment data provided by the census and the labour force survey, there are available monthly estimates of the number of wage and salary earners in civilian employment. The prime purpose of this series is to measure, as nearly as possible with available data, *current monthly trends* in employment in the defined field.

The figures shown in the next two tables have been taken from publications produced by the Commonwealth Statistician, Canberra, which contain detailed particulars for each of the Australian States and for Australia as a whole. These are *Employed Wage and Salary Earners: June 1966 to June 1969* (issued 24 April 1970), *Employed Wage and Salary Earners: July 1969 to June 1971* (issued 11 January 1972), and the regular monthly release *Employment and Unemployment*.

The estimates, except those relating to government employment (see page 499) are based on comprehensive data, referred to as 'benchmarks', derived for the purpose from the Population Census of 30 June 1966. Month-to-month changes shown by current returns are linked to the benchmark data to derive the monthly estimates. The figures used for this purpose are obtained from three main sources: (i) current pay-roll tax returns, which are lodged by all employers paying more than \$400 per week in wages, other than those specifically exempted under the pay-roll tax legislation; (ii) current returns from government bodies; and (iii) some other current returns of employment (e.g. for hospitals). The balance, i.e. unrecorded private employment, is estimated.

The figures relate only to civilian wage and salary earners, not to the total labour force. They therefore exclude employers, self-employed persons, unpaid helpers and members of the defence forces. Employees in agriculture and in private domestic service are not included in the estimates because the available data are inadequate.

The industry classification used is that of the Population Census of 30 June 1966. The estimated monthly changes are derived mainly from returns from employers relating to establishments or enterprises, while the benchmark figures were derived from particulars recorded for individuals on population census schedules, which do not in all cases provide sufficiently precise information to allow accurate coding of industry. Industry dissections of the census totals of wage and salary earners were therefore adjusted to make them consistent as far as possible with industry coding at the establishment level.

Current data supplied by reporting enterprises or establishments generally refer to persons on the pay-roll for the last pay-period in each month. Persons who are on paid leave or who work during part of the pay-period and are unemployed or on strike during the rest of the period are generally counted as employed. Those not shown on employers' pay-rolls because they are on leave without pay, on strike or stood down for the entire period are excluded.

Employment estimates for months prior to June 1966 are not comparable with those for later months, because of (a) the adoption of a new definition of the labour force at the 1966 Population Census (from which the benchmarks for the current series were derived) and (b) the inclusion of full-blood Aborigines. The new definition resulted in the inclusion of a number of part-time employees (mostly females) who had previously been excluded.

As the results of each successive population census become available it is the practice to derive from them new benchmarks for the monthly employment series, and to revise the published estimates for all periods subsequent to the date of the previous census. It is intended to use the results of the 1971 Census to establish new benchmarks and to revise the current series from July 1966.

Employment according to Industry

The table on page 498 shows the number of wage and salary earners in civilian employment in Western Australia in various industry groups and sub-groups. The figures appearing against the item 'Other' under the heading 'Other industries' comprise employees in the industry sub-groups *Law, order and public safety*; *Religion and social welfare*; *Other community and business services*; *Amusement, sport and recreation*; *Hotels, boarding houses, etc. and restaurants*; and *Other personal services*.

WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT—INDUSTRY GROUPS
(Excluding defence forces and employees in agriculture and private domestic service)
(Thousands)

Industry group and sub-group	1969		1970		1971		1972		1973
	June	Dec.	June	Dec.	June	Dec.	June	Dec.	June

MALES									
Forestry, fishing and trapping	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Mining and quarrying	9.9	10.8	11.7	12.6	13.5	13.7	13.4	14.9	15.9
Manufacturing	55.7	56.5	56.2	57.0	57.9	59.1	56.8	56.3	57.2
Electricity, gas, water and sanitary services	6.1	6.4	6.7	7.0	7.1	7.3	7.7	8.0	8.0
Building and construction	29.7	30.5	30.9	32.1	34.6	32.9	29.9	26.6	27.9
Transport and storage—									
Road transport and storage	7.8	8.3	8.8	9.2	9.4	9.4	9.3	9.4	9.3
Shipping and stevedoring	4.7	4.6	4.6	4.6	4.5	4.5	4.1	4.1	3.7
Rail and air transport	7.9	7.7	7.8	7.8	7.7	7.8	7.7	7.6	7.4
Communication	6.8	7.9	7.2	8.3	7.5	8.3	7.6	8.4	7.8
Finance and property—									
Banking	3.9	3.8	4.1	3.9	4.2	4.0	4.1	4.1	4.1
Other	4.2	4.4	4.5	4.7	4.6	4.6	4.8	4.9	5.0
Commerce—									
Retail trade	14.1	15.2	15.1	15.7	15.7	16.3	16.1	16.8	17.4
Wholesale and other commerce	17.9	18.8	18.3	19.4	18.4	19.8	18.0	18.9	17.8
Public authority activities, n.e.i.	10.1	10.3	10.8	11.2	11.4	11.5	11.8	12.0	12.2
Other industries—									
Health, hospitals, etc.	3.7	3.8	3.8	4.1	4.2	4.3	4.5	4.6	4.7
Education (a)	7.3	7.0	7.7	7.4	8.1	7.3	8.3	8.0	8.8
Other (b)	15.0	16.0	16.8	18.2	18.8	18.6	18.5	18.7	19.0
Total (a)	206.4	213.6	216.5	224.6	229.1	231.0	224.2	224.7	228.0

FEMALES									
Forestry, fishing and trapping	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mining and quarrying	0.6	0.8	0.9	1.1	1.2	1.2	1.2	1.3	1.4
Manufacturing	12.3	12.9	13.2	13.1	13.0	13.4	12.8	13.0	13.4
Electricity, gas, water and sanitary services	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Building and construction	1.5	1.6	1.7	1.9	2.2	2.1	1.9	1.7	1.8
Transport and storage—									
Road transport and storage	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9
Shipping and stevedoring	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Rail and air transport	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.7
Communication	1.7	1.9	2.0	2.2	2.3	2.3	2.4	2.4	2.4
Finance and property—									
Banking	2.3	2.3	2.7	2.7	2.9	2.9	3.0	3.1	3.2
Other	3.5	3.8	4.1	4.2	4.1	4.0	4.1	4.2	4.3
Commerce—									
Retail trade	19.7	22.0	20.7	21.9	21.0	22.4	21.6	23.3	23.3
Wholesale and other commerce	6.8	7.0	7.2	7.3	7.4	7.5	7.3	7.3	7.4
Public authority activities, n.e.i.	4.0	4.2	4.4	4.7	4.9	4.9	5.1	5.1	5.3
Other industries—									
Health, hospitals, etc.	14.7	15.1	15.8	16.3	17.2	18.3	19.5	20.1	21.4
Education (a)	10.2	8.6	11.7	9.8	12.9	8.8	12.6	10.0	13.6
Other (b)	17.8	19.4	20.7	22.6	23.3	23.6	24.0	24.2	25.2
Total (a)	97.3	101.9	107.5	110.2	114.8	114.1	118.0	118.3	125.3

PERSONS									
Forestry, fishing and trapping	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Mining and quarrying	10.5	11.6	12.6	13.7	14.7	14.9	14.6	16.1	17.3
Manufacturing	68.0	69.4	69.3	70.1	71.0	72.5	69.6	69.4	70.6
Electricity, gas, water and sanitary services	6.5	6.8	7.2	7.5	7.6	7.7	8.2	8.5	8.6
Building and construction	31.2	32.1	32.6	34.0	36.8	34.9	31.7	28.3	29.7
Transport and storage—									
Road transport and storage	8.6	9.0	9.6	10.0	10.2	10.4	10.2	10.3	10.3
Shipping and stevedoring	5.0	4.9	4.9	4.9	4.8	4.8	4.4	4.4	4.0
Rail and air transport	8.5	8.4	8.5	8.5	8.5	8.7	8.4	8.3	8.2
Communication	8.5	9.9	9.2	10.5	9.8	10.6	9.9	10.8	10.3
Finance and property—									
Banking	6.2	6.1	6.8	6.6	7.1	6.9	7.1	7.1	7.3
Other	7.7	8.2	8.6	8.9	8.7	8.6	8.9	9.2	9.3
Commerce—									
Retail trade	33.8	37.2	35.9	37.6	36.7	38.7	37.8	40.1	40.7
Wholesale and other commerce	24.7	25.9	25.5	26.7	25.7	27.3	25.3	26.1	25.2
Public authority activities, n.e.i.	14.1	14.5	15.3	15.9	16.2	16.4	16.9	17.1	17.5
Other industries—									
Health, hospitals, etc.	18.4	18.9	19.6	20.4	21.3	22.7	24.1	24.7	26.1
Education (a)	17.5	15.6	19.4	17.2	21.0	16.1	20.9	18.0	22.4
Other (b)	32.8	35.5	37.5	40.8	42.1	42.2	42.5	42.9	44.2
Total (a)	303.7	315.5	324.0	334.8	343.9	345.1	342.2	343.0	353.3

(a) See letterpress immediately preceding next table. (b) See letterpress *Employment according to Industry* on previous page.

Government Employment

Employees of government and semi-government authorities are included in the figures shown in the table on page 498. Estimates of the numbers employed by Australian Government, State Government, and local government authorities are available separately. They include not only those engaged in administrative activities but also employees on services such as railways, road transport, air transport, shipping, education, health, hospitals and institutions, migrant hostels, banks, post office, broadcasting and television, police, factories, electricity generation and supply, water conservation, irrigation, road and bridge construction, harbour works and other public works. In the following table, government employment so defined is shown for the months of June and December in the period from June 1969 to June 1973.

At the Population Census of 30 June 1971 trainee teachers were, for the first time, classified as not being in the labour force. They have been excluded from the employment estimates from July 1971 onwards, and there is consequently a break in series between the figures for June 1971 and those for July 1971 and later months. The approximate numbers excluded from the estimates for July 1971 were 400 males and 1,500 females.

GOVERNMENT AUTHORITIES—CIVILIAN EMPLOYEES IN WESTERN AUSTRALIA (a) (Thousands)

Month	Australian Government (b)			State Government (b) (c)			Local government (c)			Total (b)		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1969—												
June	13.6	4.2	17.9	45.0	15.3	60.2	5.4	0.9	6.3	64.0	20.4	84.4
Dec.	14.8	4.5	19.3	44.8	14.5	59.3	5.7	1.0	6.6	65.2	20.0	85.2
1970—												
June	14.3	4.7	19.0	45.9	17.1	63.1	5.7	1.0	6.7	65.9	22.8	88.8
Dec.	15.3	4.8	20.1	46.7	16.0	62.7	5.7	1.0	6.8	67.7	21.9	89.6
1971—												
June	14.7	5.1	19.7	47.7	18.7	66.5	5.6	1.0	6.7	68.0	24.8	92.9
Dec. (d)	15.5	5.1	20.7	47.5	15.5	63.0	5.8	1.1	6.9	68.9	21.7	90.6
1972—												
June	15.0	5.3	20.3	50.2	18.7	69.0	6.5	1.1	7.6	71.7	25.1	96.8
Dec.	15.9	5.5	21.4	50.4	16.9	67.3	7.0	1.2	8.2	73.3	23.5	96.8
1973—												
June	15.5	5.7	21.2	51.2	20.2	71.4	6.7	1.2	7.8	73.4	27.1	100.5

(a) Included in the figures shown in the table on page 498.
(c) Excludes a small number of employees engaged in agriculture.
see letterpress immediately preceding table.

(b) Includes employees of semi-government authorities.
(d) A line drawn across a column indicates a break in series;

UNEMPLOYMENT

A full count of unemployed persons in Western Australia is available only from population censuses. For the purpose of the Census of 30 June 1971, unemployed members of the labour force were those persons who did no work during the week preceding the census enumeration and either looked for work (having no job) or were temporarily laid off from a job. The number of persons recorded in this category in Western Australia was 8,652 (5,361 males and 3,291 females), equivalent to 2.01 per cent of the labour force. Numbers of males and females unemployed in each of the Australian States and Territories and Australia as a whole are given in the table on page 489.

Department of Labour

Monthly figures are compiled by the Department of Labour (until December 1972, the Department of Labour and National Service) from the operations of its Commonwealth Employment Service. These data provide indicators of movement in the level of unemployment.

The department makes a count of the number of persons, registered with the Employment Service for employment on the Friday nearest to the end of the month, who claimed at the time of registering that they were not employed, and who were still recorded as unplaced. Included in the figures are persons who have been referred to employers and

those who may have obtained employment without notifying the department. Also available from the Department of Labour is the number of vacancies, registered by employers, which were recorded as unfilled at the end of the month.

The following table gives a classification according to occupational group of unemployed persons and unfilled vacancies in Western Australia at the end of June of the years 1971 to 1973. The figures are taken from the *Monthly Review of the Employment Situation*, which is published by the Department of Labour and contains similar statistics, together with additional information, for each of the Australian States and for Australia as a whole.

UNEMPLOYED PERSONS AND UNFILLED VACANCIES CLASSIFIED ACCORDING TO OCCUPATIONAL GROUP

Occupational group	At end of June (a)—								
	1971			1972			1973		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
UNEMPLOYED PERSONS (b) (c)									
Rural	255	11	266	256	3	259	255	3	258
Professional and semi-professional	37	40	77	76	96	172	59	70	129
Clerical and administrative	473	1,120	1,593	937	1,705	2,642	723	1,433	2,156
Skilled building and construction	253	.....	253	524	.....	524	211	.....	211
Skilled metal and electrical	287	.....	287	1,032	1	1,033	357	1	358
Other skilled (d)	86	17	103	220	9	229	107	11	118
Semi-skilled	1,269	261	1,530	2,704	442	3,146	1,487	275	1,762
Unskilled manual.....	1,761	5	1,766	2,624	10	2,634	2,130	7	2,137
Service occupations (e)	302	506	808	639	798	1,437	513	819	1,332
Total	4,723	1,960	6,683	9,012	3,064	12,076	5,842	2,619	8,461

UNFILLED VACANCIES (f)

Rural	26	1	27	57	2	59	108	3	111
Professional and semi-professional	53	140	193	32	165	197	52	158	210
Clerical and administrative	122	246	368	88	198	286	159	381	540
Skilled building and construction	96	.....	96	73	.....	73	142	.....	142
Skilled metal and electrical	687	3	690	205	3	208	525	.....	525
Other skilled (d)	100	11	111	52	3	55	170	10	180
Semi-skilled	393	91	484	244	76	320	738	168	906
Unskilled manual.....	129	9	138	140	5	145	302	16	318
Service occupations (e)	47	186	233	35	186	221	76	294	370
Total	1,653	687	2,340	926	638	1,564	2,272	1,030	3,302

(a) At the Friday nearest to the end of June. (b) Persons who claimed when registering with the Commonwealth Employment Service that they were not employed and who were recorded as unemployed. Includes those referred to employers and those who may have obtained employment without notifying the Commonwealth Employment Service. Includes also persons receiving unemployment benefit. (c) Includes persons seeking apprenticeships, cadetships and other forms of training. (d) Includes skilled workers in mining and in the following trades: stone, glass, chemicals, leather, rubber, clothing, textiles, footwear, food, drink, tobacco, wood, furnishing, paper and printing. (e) Includes hairdressers; private domestic, hotel and guest-house workers; caretakers and cleaners; and protective service occupations. (f) Includes apprenticeships, cadetships and other forms of training.

Applications for unemployment benefit are received by the Department of Labour acting on behalf of the Department of Social Security. Persons seeking unemployment benefit must register with the Commonwealth Employment Service (see below), which is responsible for certifying that suitable employment is not available before benefits can be paid. Statistics of the number of persons receiving unemployment benefits are given on page 233.

COMMONWEALTH EMPLOYMENT SERVICE

The Commonwealth Employment Service is established under the provisions of the *Re-establishment and Employment Act 1945-1973*. The main functions of the Service are to assist people seeking employment to obtain positions best suited to their training, experience, abilities and qualifications, and to assist employers seeking labour to obtain employees best suited to the kinds of work being offered.

Specialised facilities are provided for young people; persons with physical and mental handicaps; former members of the defence forces; Aborigines; rural workers; and persons with professional and technical qualifications. Vocational guidance is provided without charge by a staff of qualified psychologists. Guidance is available to any person, but is provided particularly for young people, ex-servicemen and the physically handicapped. A Career Reference Centre has been established in Perth to enable students to obtain information on courses and provide them with the opportunity of investigating at leisure their career choices. The Centre provides information in a more extensive manner than is possible in an employment interview or when a visit is made to a school.

The Commonwealth Employment Service is responsible for placing in employment migrant workers sponsored by the Australian Government under migration schemes. This function includes arranging for them to move to their initial employment and for their admission, if necessary, to Australian Government migrant hostels.

In association with placement activities, regular surveys of the labour market are carried out, and detailed information is supplied to interested Australian Government and State Government departments and instrumentalities and to the public. Employers, employees and other interested persons are advised on labour availability, industrial training and employment opportunities in various occupations and areas and on other matters concerning employment.

In Western Australia at 30 September 1973, the Commonwealth Employment Service operated six offices in Perth and suburbs, and there were offices at Albany, Bunbury, Collie (part-time), Esperance, Geraldton, Kalgoorlie, Kwinana, Manjimup, Merredin, Northam and Port Hedland.

The Commonwealth Employment Service has a Professional Employment Office in Perth, which deals with the placement of the more highly qualified executive and professional applicants. Experts for overseas service under technical aid programmes are recruited by the Service.

Chapter X—continued

Part 3—Prices

RETAIL PRICES AND PRICE INDEXES

Prices of a limited range of commodities are recorded in the Blue Books of Western Australia from the early years of settlement. Retail prices of food and groceries and average rentals of houses for years extending back to 1901 have been collected by the Commonwealth Statistician, but it was not until 1911 that a systematic collection of retail price statistics was begun. These statistics were used to compile the 'A' Series Index, which covered food, groceries and house rents and was first compiled in 1912 with the year 1911 as base = 1,000. Four other indexes covering a wider range of commodities and services were compiled by the Commonwealth Statistician at different times before the current Consumer Price Index was introduced in 1960 (retrospectively to the September quarter of 1948).

Retail price indexes aim to measure the changes which occur in the general level of prices in a selected field. The basic principle of a price index is to select commodities and services representative of the field to be covered, and to combine their prices at regular intervals by the use of 'weights' which represent the relative importance of the several commodities and services in the selected field taken as a whole.

Information concerning retail price indexes and their development in Australia is given in the *Official Year Book of the Commonwealth of Australia* and the *Labour Report*, published by the Commonwealth Statistician, Canberra.

The Consumer Price Index. The purpose of the Consumer Price Index is to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditures of wage-earner households. The weighting pattern relates to estimated aggregates of household expenditures and not to estimated expenditures of an 'average' or individual household of specified size, type, or mode of living.

The index covers a wide range of commodities and services arranged in five major groups, comprising Food; Clothing and Drapery; Housing; Household Supplies and Equipment; and Miscellaneous. With certain exceptions, the weights for individual items comprising these groups are derived from estimates of average household consumption or expenditure for the community as a whole.

The Consumer Price Index is designed essentially to measure the proportionate change in prices as combined in the individual groups, and more particularly, the total of the groups. Consumer (retail) price indexes are sometimes loosely called 'cost of living indexes' and are thought to measure changes in the 'cost of living'. While they may be used as indicating proportional variations in cost of a constant standard of living, they do not measure the absolute cost of any standard of living, nor the absolute cost of changes in the standard of living. The change in prices of goods and services is nevertheless a very important part of the change in the cost of living and this part is measured by consumer (retail) price indexes.

The incidence and frequency of changes in the pattern of household expenditure since 1950 have been such as to make it necessary to construct not one but a series of new indexes introducing additional items and changes in weighting patterns at short intervals. The Consumer Price Index therefore consists of a sequence of short-term retail price indexes linked to form one continuous series. At times of linking, the weighting pattern was altered and new items which had become significant in household expenditure were introduced. In each period between links the items and weighting remained unchanged.

The most recent link in the series was made as at the December quarter of 1973. The weighting of this seventh linked index has been derived from analyses of data from the 1971 Census of Population and Housing, the 1968-69 Census of Retail Establishments, the 1971 Motor Vehicle Usage Survey, from recent statistics and estimates of production, consumption, etc., and from several special purpose sample surveys. Weights of all items have been reviewed and are now broadly based on the estimated pattern of consumption in 1971-72. Further information is contained in the mimeographed release *Consumer Price Index—March Quarter 1974* issued by the Commonwealth Statistician, Canberra.

Changes from the previous (sixth) linked series include: the extension of the regimen of the Food Group to form a new sub-group 'Snacks, Take Away Food'; the inclusion of new sub-groups 'Recreational Goods and Services' and 'Wines and Spirits' in the Miscellaneous Group; the revision of weights for the motoring section of the Miscellaneous Group to take account of data from the 1971 Survey of Motor Vehicle Usage; the re-weighting of the price of houses in the Housing Group to include estimated expenditure on major alterations and additions to private houses; and the dissection of the All Groups index into the components 'Goods' and 'Services' and publication of separate index numbers for these components.

The Consumer Price Index is compiled for each of the six State capital cities and for Canberra. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in the degree of price movement, but not as to differences in the price level.

In tables dealing with the Consumer Price Index, the figures appearing after the decimal point have little significance for general statistical purposes. They are inserted to avoid distortions that would occur in rounding off the figures to the nearest whole number.

Details of movements in the Consumer Price Index are published quarterly by the Commonwealth Statistician, Canberra for the five groups individually and for all groups combined. In addition, index numbers for the Food Group and its component sub-groups are issued monthly in the publication *Consumer Price Index—Monthly Food Group Index Numbers*.

CONSUMER PRICE INDEX
(Base of each Index: Year 1966-67 = 100·0)

Year	Group index numbers					Combined index (All groups)	
	Food	Clothing and drapery	Housing	Household supplies and equipment	Miscellaneous		
PERTH							
1948-49	38·4	50·6	36·1	60·4	45·4	44·0
1953-54	74·0	84·8	62·0	92·7	66·8	74·6
1958-59	80·3	90·8	75·0	96·3	79·6	83·2
1963-64	87·4	95·7	89·8	95·7	86·2	89·8
1966-67	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	108·1	107·8	120·1	103·7	109·8	109·4
1970-71	112·5	112·3	125·7	107·7	114·8	114·1
1971-72	116·4	118·9	133·7	112·7	124·5	120·7
1972-73	124·5	126·1	139·7	117·4	130·4	127·3
1973-74	141·7	143·3	149·1	125·7	141·6	140·6
SIX STATE CAPITAL CITIES COMBINED (a)							
1948-49	38·2	48·9	40·5	58·3	44·7	43·9
1953-54	73·2	84·3	58·5	88·3	67·1	73·5
1958-59	81·6	90·5	72·9	94·4	81·4	83·6
1963-64	89·0	95·3	89·1	96·4	87·3	90·6
1966-67	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	108·1	107·5	115·5	104·1	111·6	109·4
1970-71	112·4	111·9	123·5	107·4	117·8	114·6
1971-72	116·8	118·5	133·0	111·7	*131·0	122·4
1972-73	125·7	125·8	142·4	115·4	137·5	129·8
1973-74	149·5	143·0	157·8	125·0	150·6	146·6

(a) Weighted average.

* Revised.

The following table shows the 'All groups' index numbers for the six State capital cities, separately and combined, for selected years during the period 1948-49 to 1973-74.

**CONSUMER PRICE INDEX—'ALL GROUPS' INDEX NUMBERS
SIX STATE CAPITAL CITIES, SEPARATELY AND COMBINED**
(Base of each Index: Year 1966-67 = 100·0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six State capital cities
1948-49	44·4	43·3	43·1	45·0	44·0	43·0	43·9
1953-54	74·5	72·5	70·9	74·7	74·6	74·4	73·5
1958-59	84·6	82·9	82·1	83·6	83·2	84·1	83·6
1963-64	91·4	90·4	89·6	90·2	89·8	91·7	90·6
1966-67	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1969-70	110·6	108·7	108·4	108·2	109·4	108·5	109·4
1970-71	116·8	113·1	114·2	112·5	114·1	112·6	114·6
1971-72	*126·3	119·7	121·6	119·2	120·7	*119·9	*122·4
1972-73	133·9	127·2	128·6	126·5	127·3	126·7	129·8
1973-74	151·3	144·0	146·1	143·9	140·6	142·6	146·6

* Revised.

Retail Price Index Numbers, 1901 to 1973. The index numbers shown in the following table are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: from 1901 to 1914, the 'A' Series Retail Price Index; from 1914 to 1946-47, the 'C' Series Retail Price Index; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and 'C' Series Index excluding Rent; from 1948-49 onwards, the Consumer Price Index.

**RETAIL PRICE INDEX NUMBERS, 1901 TO 1973
SIX STATE CAPITAL CITIES COMBINED**
(Base: Year 1911 = 100)

Year	Index number	Year	Index number	Year	Index number
1901	88	1926	168	1950	262
1902	93	1927	166	1951	313
1903	91	1928	167	1952	367
1904	86	1929	171	1953	383
1905	90	1930	162	1954	386
1906	90	1931	145	1955	394
1907	90	1932	138	1956	419
1908	95	1933	133	1957	429
1909	95	1934	136	1958	435
1910	97	1935	138	1959	443
1911	100	1936	141	1960	459
1912	110	1937	145	1961	471
1913	110	1938	149	1962	469
1914 (a)	114	1939	153	1963	472
1915 (a)	130	1940	159	1964	483
1916 (a)	132	1941	167	1965	502
1917 (a)	141	1942	181	1966	517
1918 (a)	150	1943	188	1967	534
1919 (a)	170	1944	187	1968	548
1920 (a)	193	1945	187	1969	564
1921 (a)	168	1946	190	1970	586
1922 (a)	162	1947	198	1971	621
1923	166	1948	218	1972	658
1924	164	1949	240	1973	720
1925	165				

(a) November.

Retail Prices. The average retail prices of selected items of food and groceries in Perth are shown in the following table.

AVERAGE RETAIL PRICES OF FOOD AND GROCERIES—PERTH
(Cents)

Commodity	Unit	1969	1970	1971	1972	1973
GROCERIES						
Bread, ordinary white, delivered	2 lb	19.8	21.0	21.4	22.8	25.3
Flour, plain	2 lb pkt	16.0	16.1	16.8	17.4	18.6
" self-raising		19.6	19.4	20.5	21.1	21.8
Tea	$\frac{1}{2}$ lb pkt	29.5	28.7	30.4	32.4	31.4
Sugar	2 kg pkt (a)	40.4	40.5	40.0	40.0	45.5
Rice	500 g pkt (b)	15.0	15.2	15.6	15.9	19.0
Jam, plum	$\frac{1}{2}$ lb	30.9	n.a.	n.a.	n.a.	n.a.
" apricot		n.a.	36.0	38.2	39.9	41.4
Oats, rolled	$\frac{1}{2}$ lb pkt	27.2	27.7	29.7	30.7	30.7
Peaches, canned	29 oz	33.9	35.4	36.4	36.6	37.5
Pears, canned		33.8	35.4	35.8	35.3	36.8
Potatoes	7 lb	42.1	47.2	51.3	51.0	59.1
Onions, brown	lb	8.0	10.7	12.1	10.3	15.5
Soap, laundry	500 g pkt (c)	32.7	34.6	35.8	*36.0	35.7
DAIRY PRODUCE						
Butter	lb	52.2	53.2	54.3	55.5	55.6
Cheese, processed	8 oz pkt	24.8	24.5	25.7	27.7	29.0
Eggs, 55 grams (d)	dozen	66.1	66.1	66.0	63.9	64.4
Bacon, rashers, prepacked	$\frac{1}{2}$ lb	44.2	44.1	45.0	44.8	47.0
Milk, evaporated	14 $\frac{1}{2}$ oz tin	17.1	17.5	18.0	19.5	19.5
" fresh, bottled, delivered	quart (e)	20.0	20.0	21.8	23.3	24.0
MEAT						
Beef (fresh)—						
Rib (without bone)	lb	54.2	57.0	57.2	60.4	70.7
Steak, rump		101.2	113.4	119.5	123.0	135.8
" T-bone (f)		81.6	89.7	95.9	103.1	111.2
" chuck		57.3	62.2	63.7	64.7	75.1
Sausages		24.8	26.2	26.9	25.1	31.2
Beef (corned)—						
Silverside		58.8	63.5	66.6	69.0	78.6
Brisket		44.6	47.6	46.8	47.0	57.4
Mutton (fresh)—						
Leg		31.9	33.6	32.8	35.6	48.6
Chops, loin		27.1	28.9	27.7	29.7	45.9
" leg		28.9	30.1	29.5	32.9	49.1
" forequarter		23.0	24.4	23.6	24.2	41.2
Lamb (fresh)—						
Leg		49.8	52.1	49.2	53.3	67.4
Chops, loin		50.1	52.7	47.6	54.9	71.3
" leg		50.6	53.8	50.3	56.6	72.4
" forequarter		42.9	45.1	41.4	46.8	62.9
Pork (fresh)—						
Leg		64.1	65.3	66.9	67.3	69.2
Loin		64.8	65.7	67.4	68.0	69.5
Chops		64.7	65.5	68.1	68.2	70.4

n.a. denotes 'not available'.

(a) Sugar, 4 lb pkt prior to January 1973.
1972. (d) Eggs, 24 oz prior to July 1972.
prior to June quarter 1972. * Revised.

(b) Rice, 1 lb pkt prior to July 1973.
(e) Price for two 1-pint bottles.

(c) Soap, 20 oz pkt prior to October
(f) With fillet; T-bone without fillet

WHOLESALE PRICE INDEXES OF MATERIALS USED IN BUILDING

House Building. The Wholesale Price Index of Materials used in House Building is compiled by the Commonwealth Statistician and was first published in November 1970 (retrospectively to July 1966). Index numbers are produced monthly for each State capital city and for the six State capital cities combined.

The index measures changes in prices of selected materials used in the construction of houses. Its composition is in accordance with the usage of materials in actual houses which were selected as representative for the purpose. The index does not purport to represent buildings of any kind other than houses. The house building construction types included are those which use brick, brick veneer, timber, or asbestos-cement sheeting as the principal material for the outer walls.

The following numbers of items are included in the lists for the respective State capital cities: Melbourne, Adelaide and Hobart, 50; Sydney, 50 (but vinyl floor tiles are not included in the item elsewhere described as 'Ceramic and vinyl floor tiles'); Brisbane,

49 (heating systems not included); and Perth, 51 (building stone and silica-lime bricks included but plaster board not included). In all cases the selection of materials was based on local usage. Items are combined in eleven groups in addition to the 'All groups' index. Some items carry the weight of similar items not directly priced. They are described in terms of fixed specifications with the aim of recording price changes for representative materials of constant quality.

The reference base of the index is the year 1966-67 = 100.0, the same as that used for the Wholesale Price Index of Materials used in Building other than House Building (see below). The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'. The items and weights were derived from reported values of each material used in selected representative houses constructed in or about the year 1968-69 in each State capital city. The selection took account, within the four major construction types, of a range of characteristics of these houses, e.g. internal partitions, windows, roofing, etc., as well as whether such things as paths and fences were included in the job.

Data obtained in each State capital city were used to construct for that city its own list of items and its individual weighting pattern. The weighting pattern derived for the weighted average of the six State capital cities is an aggregation of the individual city patterns, the weight given to each item being proportional to its estimated importance in materials usage in houses of the specified types completed in the six capital cities in 1968-69. In that year the four major construction types (*i.e.* brick, brick veneer, timber, asbestos-cement sheeting) constituted more than 99 per cent of all house building (in the six State capital cities) for which indexes have been prepared.

Price series used in the index relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in house building. In the main they are collected as at the mid-point of the month to which the index refers.

The index has been compiled for each month from July 1966 and for the financial years from 1966-67. Figures are published to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

WHOLESALE PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING GROUP INDEX NUMBERS

(Base of each Index: Year 1966-67 = 100.0)

Year	Concrete mix, cement and sand	Cement products	Clay bricks, tiles, etc.	Timber, board and joinery	Steel products	Other metal products	Plumbing fixtures, etc.	Electrical installation materials	Installed appliances	Plaster and plaster products	Miscellaneous materials	All groups
PERTH												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	102.3	104.5	103.5	105.8	101.6	105.3	101.3	103.3	101.4	103.0	103.5	104.0
1968-69	102.8	106.5	106.2	107.5	106.2	107.5	102.7	105.2	101.1	107.1	104.7	105.9
1969-70	105.3	109.1	111.4	111.1	110.8	118.4	108.1	115.1	102.6	109.4	107.7	110.3
1970-71	110.6	113.8	118.5	115.5	115.5	115.4	109.0	115.5	102.8	109.8	110.2	113.9
1971-72	117.2	121.9	129.5	121.3	128.8	119.7	114.6	120.7	107.5	110.6	117.7	121.1
1972-73	121.7	127.7	135.1	126.9	136.6	124.8	121.9	128.1	110.7	113.1	126.7	126.9
SIX STATE CAPITAL CITIES COMBINED (a)												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	101.6	102.8	103.6	103.0	101.9	103.9	101.7	103.3	100.0	101.7	102.9	102.7
1968-69	103.8	107.0	107.8	108.6	104.8	106.3	102.0	105.2	99.7	103.0	104.5	106.3
1969-70	107.1	112.6	112.4	113.5	110.0	111.8	108.7	115.8	102.2	105.1	107.4	110.9
1970-71	113.4	121.8	118.0	118.5	115.0	112.4	113.6	115.0	103.8	109.4	111.0	115.7
1971-72	121.2	132.0	124.5	124.8	127.9	118.5	122.6	120.2	107.4	116.9	116.4	122.7
1972-73	127.0	139.9	130.7	137.0	136.8	124.9	129.6	126.2	108.3	118.7	124.9	131.1

(a) Weighted average.

The separate city indexes measure price movements in each State capital city individually. They enable comparisons to be drawn between capitals as to differences in degree of price movement from period to period, but not as to differences in price level.

Further information concerning the method of compiling the index, as well as detailed group index numbers for each State capital city, is given in the annual *Labour Report* and the monthly publication, *Wholesale Price Indexes—Price Index of Materials used in House Building*, both of which are issued by the Commonwealth Statistician, Canberra.

WHOLESALE PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING

'ALL GROUPS' INDEX NUMBERS

(Base of each Index: Year 1966-67 = 100·0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	State capital city						Weighted average of six State capital cities
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	
1966-67	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1967-68	103·4	101·3	103·4	102·1	104·0	101·8	102·7
1968-69	109·3	103·6	105·6	107·0	105·9	104·1	106·3
1969-70	115·2	107·2	109·4	112·4	110·3	107·7	110·9
1970-71	119·8	112·3	115·2	116·7	113·9	114·3	115·7
1971-72	126·1	118·9	124·8	124·8	121·1	120·7	122·7
1972-73	135·6	126·5	133·8	134·8	126·9	130·8	131·1

Other Building. The Wholesale Price Index of Materials used in Building other than House Building is compiled by the Commonwealth Statistician and was first published in April 1969 (retrospectively to July 1966). Index numbers are produced monthly for each State capital city and for the six State capital cities combined.

The index measures changes in prices of selected materials used in the construction of buildings other than houses and 'low-rise' flats (in general, those up to three storeys). Its composition is in accordance with the materials usage in actual building projects which were selected as representative for the purpose. The building 'use-types' (e.g. office building, factory, etc.) directly represented are 'high-rise' flats (in general, those of more than three storeys); offices; factories; health buildings (i.e. hospitals, nurses' quarters, clinics, etc.); education buildings (i.e. schools, universities, kindergartens, etc.); and commercial premises including hotels, hostels, etc., shops, and other business premises. The index includes seventy-two items, which are combined in eleven groups as shown in the next table.

Although the selected materials (or many of them) are also used in house (and low-rise flat) building, in building repair, maintenance and alteration work, and in 'engineering construction' work (e.g. projects such as roads, dams, bridges and the like), the weighting pattern of the index, being designed for the specific purpose mentioned earlier, is not applicable to these other activities of the Construction industry. In addition, since the weights are based on an average materials usage over the stated range of building use-types, the index is not necessarily applicable to any specific building or any of the separate use-types.

The reference base of the index is the year 1966-67 = 100·0. The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'. The items and weights were derived from reported values of each material used in selected representative buildings constructed in or about the year 1966-67. The selection took account of building use-type and construction characteristics (e.g. type of frame, wall, floor, etc.) within use-types.

A single weighting pattern, relating to the whole of Australia, is applied (with minor exceptions) to local price measures in calculating indexes for each State capital city. The index for the six State capital cities combined is a weighted average of individual city

indexes. The relative weighting of the capitals is in proportion to the estimated value on completion of building other than house building in the separate States during the three years ended June 1967.

Price series used in the index relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in building. In the main they are collected as at the mid-point of the month to which the index refers.

The index has been compiled for each month from July 1966 and for the financial years from 1966-67. Figures are published to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

The separate city indexes measure price movements in each State capital city individually. They enable comparisons to be drawn between capitals as to differences in degree of price movement from period to period, but not as to differences in price level.

Further information concerning the method of compiling the index, as well as detailed group index numbers for each State capital city, is given in the annual *Labour Report* and the monthly publication, *Wholesale Price Indexes—Price Index of Materials used in Building other than House Building*, both of which are issued by the Commonwealth Statistician, Canberra.

WHOLESALE PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING—GROUP INDEX NUMBERS (Base of each Index: Year 1966-67 = 100.0)

Year	Concrete mix, cement, sand, etc.	Cement products	Bricks, stone, etc.	Timber, board and joinery	Steel and iron products	Aluminium products	Other metal products	Plumbing fixtures	Miscellaneous materials	Electrical installation materials (a)	Mechanical services components (b)	All groups
PERTH												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	100.6	104.3	103.0	104.1	101.7	99.7	105.7	101.7	102.7	100.9	101.4	102.0
1968-69	101.4	108.1	106.2	108.0	104.2	101.8	106.4	103.4	103.9	102.1	107.5	104.7
1969-70	102.8	111.3	111.4	111.3	107.1	102.6	127.0	110.8	107.8	112.2	111.5	108.9
1970-71	107.0	118.3	119.0	115.4	112.9	105.8	117.4	112.7	111.8	110.9	118.7	113.3
1971-72	113.6	119.8	128.8	119.6	125.1	115.0	114.4	118.3	119.2	114.7	127.3	121.3
1972-73	118.4	127.5	133.3	126.4	129.2	118.2	118.4	127.1	125.6	120.5	132.0	126.3
SIX STATE CAPITAL CITIES COMBINED (c)												
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	101.5	102.2	103.7	103.0	102.3	101.4	105.9	102.8	102.3	100.9	101.4	102.2
1968-69	103.5	106.8	108.2	107.2	106.1	103.9	106.8	103.3	103.2	102.1	107.7	105.6
1969-70	106.9	111.7	112.6	111.2	110.1	107.4	126.3	113.7	105.8	112.2	111.8	110.5
1970-71	113.0	118.0	118.6	117.0	115.8	113.0	121.4	121.3	110.3	110.9	119.0	115.5
1971-72	120.6	126.1	124.2	123.4	125.4	119.3	120.6	134.3	116.9	114.7	127.7	123.0
1972-73	124.5	135.0	130.1	132.9	130.3	125.4	126.4	143.5	124.5	120.5	132.4	128.9

(a) Based on Sydney and Melbourne prices; see letterpress *Electrical Installation Materials* on page 509.
(b) In the main based on Sydney and Melbourne prices.

(c) Weighted average.

WHOLESALE PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING—'ALL GROUPS' INDEX NUMBERS (Base of each Index: Year 1966-67 = 100.0)

NOTE. The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Year	State capital city						Weighted average of six State capital cities
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	
1966-67	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	102.6	101.7	102.2	101.8	102.0	102.3	102.2
1968-69	106.5	105.0	105.1	105.0	104.7	105.1	105.6
1969-70	111.7	109.8	110.3	109.4	108.9	109.7	110.5
1970-71	116.4	115.1	116.4	113.9	113.3	115.0	115.5
1971-72	122.4	123.9	124.4	122.7	121.3	122.6	123.0
1972-73	127.2	131.2	130.4	129.8	126.3	129.7	128.9

Electrical Installation Materials. The Wholesale Price Index of Electrical Installation Materials is compiled by the Commonwealth Statistician and was first published in November 1964 (retrospectively to 1959-60).

The index measures changes in the aggregate cost of electrical installation materials used in building other than house building. Items in the index have been selected as representative of materials used in buildings such as hospitals, schools, factories and multi-storeyed commercial buildings and flats. These items are divided into three main groups for which separate indexes are compiled, in addition to an 'All groups' index.

The basis of pricing is the price to electrical contractors, delivered on site or into store in the metropolitan areas of Sydney and Melbourne. The price series used relate to specified standards of each commodity and are collected as at the mid-point of the month to which the index relates.

The reference base of the Wholesale Price Index of Electrical Installation Materials is the year 1959-60 = 100·0. In general, the weights used in compiling the index were derived from information relating to the values of materials used in selected representative projects in Sydney and Melbourne during the three years 1960-61 to 1962-63. Figures are published to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

Index numbers are issued monthly by the Commonwealth Statistician, Canberra in the publication *Wholesale Price Indexes—Price Index of Electrical Installation Materials*.

Annual index numbers for each group of items and for 'All groups' are given in the following table.

**WHOLESALE PRICE INDEX OF ELECTRICAL INSTALLATION MATERIALS
GROUP INDEX NUMBERS**

(Base of each Index: Year 1959-60 = 100·0)

Year	Group			All groups
	Conductors	Conduit and accessories	Switch-board and switch-gear material	
1959-60	100·0	100·0	100·0	100·0
1968-69	119·5	107·3	115·3	115·0
1969-70	142·1	109·6	120·1	126·2
1970-71	128·4	112·8	129·2	124·8
1971-72	126·7	120·9	137·7	129·1
1972-73	133·5	126·8	144·2	135·5

STATISTICAL SUMMARY FROM 1829

In the next twenty-one pages, a historical summary of some of the more important statistics relating to Western Australia is shown. This is intended to present a general picture of the development of the State, with details being given (wherever they are available) for the year 1829, for every tenth year in the period 1830-1910, and for each single year from 1915. Figures for the periods 1901-1909 and 1911-1914 have been omitted from the tables in several instances owing to insufficient space. In these cases, the figures are available, if required, from the *Western Australian Year Book*, No. 7—1968 and earlier issues, and the *Statistical Register of Western Australia*.

ESTIMATED POPULATION, NATURAL INCREASE AND MIGRATION (a)

NOTE. A line drawn across a column indicates a break in continuity in the series. Figures above the line exclude full-blood Aborigines; those below the line refer to total population, i.e. including Aborigines. See also NOTE on page 120.

Year	Population at 31 December			Population increase				Mean population		Population of Perth Statistical Division (f)
	Males	Females	Persons	Recorded natural increase (b)	Estimated net migration (c)	Total increase (d)		Year ended—		
						Number	Per cent (e)	30 June	31 December	
				(g)	(g)	(g)	(g)			('000)
1829	769	234	1,003	(g)	(g)	(g)	(g)		(g)	
1830	877	295	1,172	(g)	(g)	169	16.85		(g)	
1840	1,434	877	2,311	34	123	157	7.29		(g)	
1850	3,576	2,310	5,886	132	1,109	1,241	26.72		(g)	
1860	9,597	5,749	15,346	379	130	509	3.43	(g)	15,092	
1870	15,511	9,624	25,135	475	7	482	1.96		24,894	
1880	16,985	12,576	29,561	551	129	422	1.45		29,350	
1890	28,854	19,648	48,502	1,021	1,821	2,842	6.22		47,081	20
1900	110,088	69,879	179,967	3,214	6,495	9,709	5.70		175,113	73
1910	157,971	118,861	276,832	4,845	6,312	11,157	4.20	266,686	271,019	115.7
1915	170,890	145,773	316,663	6,025	11,451	5,426	1.68	322,996	321,247	133.3
1916	159,237	147,643	306,880	5,478	15,261	9,783	3.09	317,867	313,066	135.6
1917	157,532	149,306	306,838	5,113	5,155	42	0.01	308,756	306,339	142.3
1918	159,865	150,318	310,183	4,273	928	3,345	1.09	306,804	308,198	145.6
1919	174,981	152,879	327,860	3,347	14,330	17,677	5.70	311,835	319,955	155.7
1920	176,895	154,428	331,323	4,761	1,298	3,463	1.06	327,152	330,023	167.0
1921	178,968	157,580	336,548	4,327	898	5,225	1.58	331,973	334,084	171.0
1922	184,471	161,073	345,544	4,964	4,032	8,996	2.67	337,269	341,375	178.1
1923	191,131	165,728	356,859	4,924	6,391	11,315	3.27	345,891	350,772	191.8
1924	197,676	170,648	368,324	5,038	6,427	11,465	3.21	356,751	363,152	199.9
1925	202,554	174,973	377,527	4,870	4,333	9,203	2.50	368,525	372,970	203.0
1926	206,797	178,436	385,233	4,951	2,755	7,706	2.04	376,933	380,930	208.4
1927	215,851	184,046	399,897	5,089	9,575	14,664	3.81	385,780	392,071	216.2
1928	225,072	189,549	414,621	5,064	9,660	14,724	3.68	399,777	407,576	222.4
1929	231,361	195,276	426,637	5,121	6,895	12,016	2.90	414,489	420,756	229.0
1930	232,868	198,742	431,610	5,426	453	4,973	1.17	425,785	429,079	235.1
1931	232,397	201,289	433,686	4,868	2,792	2,076	0.48	431,022	432,347	239.9
1932	233,049	203,271	436,320	4,250	1,616	2,634	0.61	433,596	435,041	238.9
1933	234,744	205,898	440,642	4,084	238	4,322	0.99	436,798	438,780	232.1
1934	236,140	207,589	443,729	3,725	638	3,087	0.70	440,736	442,354	234.3
1935	238,739	210,884	449,623	4,001	1,893	5,894	1.33	444,275	446,874	237.7
1936	240,827	213,373	454,200	4,249	328	4,577	1.02	449,728	452,294	241.0
1937	244,050	216,492	460,542	4,544	1,798	6,342	1.40	454,532	457,328	244.4
1938	246,943	219,741	466,684	4,907	1,235	6,142	1.33	460,642	463,808	247.7
1939	249,065	223,315	472,380	4,696	1,000	5,696	1.22	466,896	469,780	252.2
1940	248,734	225,342	474,076	4,598	2,902	1,696	0.36	472,060	473,397	255.5
1941	246,842	226,371	473,213	4,906	5,769	863	0.18	474,180	473,988	260.0
1942	246,816	229,839	476,655	3,791	349	3,442	0.73	474,833	476,619	265.6
1943	246,389	231,875	478,264	5,137	3,528	1,609	0.34	476,989	476,745	272.3
1944	249,301	235,474	484,775	5,857	654	6,511	1.36	478,271	481,498	281.2
1945	251,590	238,498	490,088	5,418	105	5,313	1.10	484,720	487,510	289.0
1946	255,310	241,663	496,973	7,277	392	6,885	1.40	489,982	492,771	297.9
1947	261,653	247,109	508,762	8,119	3,670	11,789	2.37	497,006	502,951	307.3
1948	268,304	253,695	521,999	8,246	4,991	13,237	2.60	508,747	514,621	315.8
1949	280,273	263,911	544,184	8,721	13,464	22,185	4.25	521,932	532,603	331.4
1950	294,758	277,891	572,649	9,710	19,295	28,465	5.23	545,134	557,878	351.7
1951	304,454	285,885	590,339	9,506	8,184	17,690	3.09	570,346	580,317	362.8
1952	316,700	296,235	612,935	10,204	12,392	22,596	3.83	589,887	600,615	378.1
1953	326,372	305,371	631,743	10,790	8,018	18,808	3.07	611,191	621,034	390.1
1954	334,342	314,365	648,707	10,564	6,400	16,964	2.69	630,705	639,963	402.2
1955	343,838	324,771	668,609	11,244	8,658	19,902	3.07	648,222	657,323	416.8
1956	350,333	330,935	681,268	11,344	1,315	12,659	1.89	666,898	674,459	427.4
1957	356,195	339,039	695,234	11,627	2,339	13,966	2.05	680,949	687,448	438.9
1958	361,441	345,755	707,196	11,177	785	11,962	1.72	693,568	699,915	449.3
1959	366,253	352,438	718,691	11,614	119	11,495	1.63	705,869	711,737	459.5
1960	372,665	358,368	731,033	11,229	1,113	12,342	1.72	717,316	722,900	470.3
1961	384,773	370,440	755,213	11,349	2,571	13,920	1.90	729,770	737,596	482.7
1962	395,891	381,357	777,248	11,254	10,499	22,035	2.92	755,770	766,205	500.3
1963	407,024	391,871	798,895	11,314	10,068	21,647	2.79	777,413	788,457	517.8
1964	417,023	401,098	818,121	10,256	8,705	19,226	2.41	798,824	808,300	534.0
1965	427,330	410,918	838,248	9,912	9,963	20,127	2.46	817,157	826,481	550.9
1966	440,913	423,180	864,093	10,292	15,553	25,845	3.08	837,290	849,189	571.8
1967	458,438	438,550	896,988	11,244	21,651	32,895	3.81	863,539	879,815	597.7
1968	479,938	457,862	937,800	12,073	28,739	40,812	4.55	896,761	915,757	629.2
1969	500,378	476,242	976,620	13,404	25,416	38,820	4.14	935,985	955,660	659.7
1970	520,174	493,878	1,014,052	14,075	23,357	37,432	3.83	975,063	994,201	689.6
1971	537,781	511,116	1,048,897	16,433	18,412	34,845	3.44	1,013,455	1,031,614	*718.2
1972	544,918	520,845	1,065,763	14,736	2,130	16,866	1.61	1,046,627	1,056,508	*734.8
1973	554,342	530,057	1,084,399	12,665	5,971	18,636	1.75	1,064,207	1,072,680	752.8

(a) Estimates for years prior to 1971 are based on final census results; those for 1971 and later years are subject to revision after the next census. (b) Excess of births over deaths, including deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947. (c) Interstate and overseas. (d) Minus sign (—) denotes decrease. (e) The rates represent total increase in population during the year expressed as a proportion per cent of the population at the end of the previous year. (f) At 31 December. (g) Not available. * Revised.

VITAL STATISTICS

See NOTE at head of previous table.

Year	Marriages registered	Live births registered	Deaths registered (b)	Natural increase (c)	Rate per 1,000 of mean population (a)				Infant mortality	
					Marriages	Births	Deaths (b)	Natural increase (c)	Number (d)	Rate (e)
1840	25	54	20	34	(f)	(f)	(f)	(f)	(f)	(f)
1850	37	186	54	132	(f)	(f)	(f)	(f)	(f)	(f)
1860	151	588	209	379	10.01	38.96	13.85	25.11	(f)	(f)
1870	153	853	378	475	6.15	34.27	15.18	19.08	100	117.23
1880	214	933	382	551	7.29	31.79	13.02	18.77	72	77.17
1890	278	1,561	540	1,021	5.90	33.16	11.47	21.69	140	89.69
1900	1,781	5,454	2,240	3,214	10.17	31.15	12.79	18.35	688	126.15
1910	2,107	7,585	2,740	4,845	7.77	27.99	10.11	17.88	593	78.20
1915	2,581	9,017	2,992	6,025	8.03	28.07	9.31	18.76	600	66.54
1916	2,365	8,563	3,085	5,478	7.55	27.35	9.85	17.50	567	66.22
1917	1,621	7,882	2,769	5,113	5.29	25.73	9.04	16.69	450	57.09
1918	1,612	7,106	2,833	4,273	5.23	23.06	9.19	13.87	406	57.13
1919	2,194	6,937	3,590	3,347	6.86	21.68	11.22	10.46	424	61.12
1920	2,932	8,149	3,388	4,761	8.88	24.69	10.27	14.42	538	66.02
1921	2,656	7,807	3,480	4,327	7.95	23.37	10.42	12.95	611	78.26
1922	2,446	8,131	3,167	4,964	7.17	23.82	9.28	14.54	452	55.59
1923	2,376	7,854	2,930	4,924	6.77	22.39	8.35	14.04	442	56.28
1924	2,596	8,301	3,263	5,038	7.15	22.86	8.99	13.87	414	49.87
1925	2,746	8,185	3,315	4,870	7.36	21.95	8.89	13.06	463	56.57
1926	2,844	8,301	3,350	4,951	7.47	21.79	8.79	13.00	409	49.27
1927	3,108	8,482	3,393	5,089	7.93	21.63	8.65	12.98	389	45.86
1928	3,309	8,704	3,640	5,064	8.12	21.36	8.93	12.43	419	48.14
1929	3,367	9,051	3,930	5,121	8.00	21.51	9.34	12.17	508	56.13
1930	3,205	9,200	3,774	5,426	7.47	21.44	8.80	12.64	430	46.74
1931	2,741	8,549	3,681	4,868	6.34	19.77	8.51	11.26	355	41.53
1932	2,904	7,965	3,715	4,250	6.68	18.31	8.54	9.77	355	44.57
1933	3,374	7,874	3,790	4,084	7.69	17.95	8.64	9.31	290	36.83
1934	3,682	7,801	4,076	3,725	8.32	17.64	9.21	8.42	319	40.89
1935	3,940	8,119	4,118	4,001	8.82	18.17	9.22	8.95	326	40.15
1936	4,242	8,479	4,230	4,249	9.38	18.75	9.35	9.39	358	42.22
1937	4,169	8,609	4,065	4,544	9.12	18.82	8.89	9.94	323	37.52
1938	4,153	9,141	4,234	4,907	8.95	19.71	9.13	10.58	309	33.80
1939	4,195	9,036	4,336	4,700	8.93	19.23	9.23	10.00	369	40.84
1940	5,234	9,121	4,486	4,635	11.06	19.27	9.48	9.79	403	44.18
1941	5,077	10,118	4,769	5,349	10.71	21.35	10.06	11.29	357	35.28
1942	5,441	9,901	5,076	4,825	11.42	20.77	10.65	10.12	365	36.86
1943	4,528	10,481	4,587	5,894	9.50	21.98	9.62	12.36	342	32.64
1944	4,506	10,870	4,478	6,392	9.36	22.58	9.30	13.28	354	32.37
1945	3,788	10,672	4,712	5,960	7.77	21.89	9.67	12.23	315	29.52
1946	5,171	12,105	4,753	7,352	10.49	24.57	9.65	14.92	376	31.06
1947	5,282	12,874	4,723	8,151	10.50	25.60	9.39	16.21	398	30.92
1948	5,186	12,931	4,685	8,246	10.08	25.13	9.10	16.02	331	25.60
1949	4,951	13,511	4,790	8,721	9.30	25.37	8.99	16.37	357	26.42
1950	5,434	14,228	5,058	9,170	9.74	25.50	9.07	16.44	386	27.13
1951	5,390	14,794	5,288	9,506	9.29	25.49	9.11	16.38	425	28.73
1952	5,389	15,413	5,209	10,204	8.97	25.66	8.67	16.99	384	24.98
1953	5,032	15,862	5,072	10,790	8.10	25.54	8.17	17.37	378	23.83
1954	5,204	15,928	5,364	10,564	8.13	24.89	8.38	16.51	359	22.54
1955	5,145	16,623	5,379	11,244	7.83	25.29	8.18	17.11	373	22.44
1956	5,080	16,916	5,572	11,344	7.53	25.08	8.26	16.82	384	22.70
1957	4,897	16,924	5,297	11,627	7.12	24.62	7.71	16.91	357	21.09
1958	5,038	16,731	5,554	11,177	7.20	23.90	7.94	15.97	360	21.52
1959	5,387	17,111	5,497	11,614	7.57	24.04	7.72	16.32	345	20.16
1960	5,323	16,926	5,697	11,229	7.36	23.41	7.88	15.53	366	21.62
1961	5,150	17,078	5,729	11,349	6.98	23.15	7.77	15.39	336	19.67
1962	5,466	17,064	5,810	11,254	7.23	22.58	7.69	14.89	380	22.27
1963	5,755	17,290	5,976	11,314	7.40	22.23	7.68	14.55	353	20.42
1964	6,023	16,685	6,429	10,256	7.55	20.93	8.06	12.86	328	19.66
1965	6,448	16,186	6,274	9,912	7.91	19.85	7.70	12.16	351	21.68
1966	7,002	17,194	6,902	10,292	8.25	20.25	8.13	12.12	343	19.95
1967	7,430	18,023	6,779	11,244	8.44	20.48	7.71	12.78	314	17.42
1968	8,086	19,541	7,468	12,073	8.83	21.34	8.16	13.18	398	20.37
1969	8,993	20,754	7,350	13,404	9.41	21.72	7.69	14.03	453	21.83
1970	9,227	21,618	7,543	14,075	9.28	21.74	7.59	14.16	459	21.23
1971	9,382	24,239	7,806	16,433	9.09	23.50	7.57	15.93	464	19.14
1972	9,120	22,177	7,441	14,736	8.63	20.99	7.04	13.95	348	15.69
1973	9,102	20,510	7,845	12,665	8.49	19.12	7.31	11.81	394	19.21

(a) Rates for years prior to 1971 are based on final census results; those for 1971 and later years are subject to revision after the next census.
 (b) Excludes deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947.
 (c) Excess of Live births registered over Deaths registered; see also note (b).
 (d) Deaths under one year of age; included in Deaths registered.
 (e) Per 1,000 live births.
 (f) Not available.

PUBLIC REVENUE AND EXPENDITURE: CONSOLIDATED REVENUE FUND
(\$'000)

Year (a)	Revenue					Total revenue	Expenditure					Total expenditure
	Common-wealth funds	Public utilities	Departmental (b)	Taxation	Territorial (c)		Public utilities	Interest and sinking fund	Departmental			
									Education	Health	Other	
1840					5	34			n.a.			30
1850					4	38		n.a.	n.a.			33
1860					35	140			3			123
1870	n.a.	n.a.	n.a.	n.a.	40	196	n.a.		7			226
1880					72	360		40	19	n.a.	n.a.	409
1890					217	829		144	23			803
1900		2,612	182	244	380	5,751	1,863	880	138	198	2,049	5,231
1910	1,407	3,916	551	673	649	7,315	2,440	2,006	367	328	1,533	6,895
1915	1,263	5,513	753	744	793	10,281	3,814	3,093	625	492	1,559	11,413
1916	1,232	5,738	854	816	783	10,714	3,951	3,328	635	531	1,397	11,410
1917	1,189	5,279	931	805	660	9,154	3,913	3,532	668	561	1,561	10,554
1918	1,198	5,255	883	899	632	9,245	3,869	3,750	708	444	1,503	10,657
1919	1,171	5,362	962	1,258	690	9,890	4,131	3,946	732	482	1,602	11,194
1920	1,197	6,364	1,188	1,688	818	11,727	5,156	4,124	829	642	1,931	13,063
1921	1,188	7,517	1,618	1,911	875	13,579	6,290	4,459	980	590	2,231	14,953
1922	1,168	7,787	1,822	1,762	870	13,814	6,120	4,875	1,112	540	2,172	15,278
1923	1,166	8,000	2,092	1,975	807	14,415	5,847	5,150	1,126	538	2,100	15,226
1924	1,171	8,776	2,173	2,347	925	15,731	6,065	5,668	1,161	544	2,229	16,190
1925	1,176	9,154	2,576	2,448	1,004	16,763	6,195	6,193	1,171	587	2,191	16,880
1926	1,177	9,280	2,831	2,836	1,083	17,616	6,577	6,596	1,010	610	2,400	17,815
1927	2,306	9,941	3,274	2,423	1,102	19,502	6,958	6,590	1,294	604	3,351	19,445
1928	1,618	10,589	3,205	2,593	1,222	19,616	7,467	6,358	1,337	606	3,246	19,669
1929	1,623	10,772	3,312	2,740	1,029	19,896	7,885	6,671	1,358	634	3,278	20,448
1930	1,547	10,596	3,134	2,906	950	19,501	8,073	6,891	1,385	649	2,872	20,537
1931	1,547	9,228	3,279	2,269	678	17,374	6,654	7,243	1,346	486	3,950	20,215
1932	1,547	8,818	2,766	2,014	585	16,071	5,724	7,015	1,098	328	4,543	19,186
1933	1,947	8,873	2,701	2,257	558	16,664	5,682	7,009	1,108	333	3,761	18,392
1934	2,147	8,867	2,240	2,737	626	16,963	5,870	7,095	1,153	309	3,560	18,541
1935	2,413	9,837	1,562	3,804	812	18,663	6,391	7,100	1,225	326	3,342	18,854
1936	2,617	10,366	1,677	4,372	767	20,067	6,756	7,135	1,331	341	3,595	19,891
1937	2,013	10,633	1,727	4,807	773	20,371	7,247	7,237	1,432	381	4,024	21,113
1938	2,097	11,148	1,980	5,190	749	21,638	7,249	7,579	1,474	380	4,158	21,659
1939	2,087	11,159	1,786	5,728	634	21,899	7,857	7,779	1,514	401	3,992	22,340
1940	2,137	11,102	1,942	5,992	632	22,240	7,662	8,021	1,545	416	4,070	22,534
1941	2,247	11,366	1,916	6,255	638	22,864	7,534	8,114	1,568	421	4,262	22,842
1942	2,207	12,133	2,204	6,222	620	23,880	8,282	8,204	1,662	436	4,293	23,877
1943	7,852	13,518	2,497	1,330	634	26,303	9,377	8,183	1,627	458	5,564	26,254
1944	7,935	13,626	2,868	1,553	700	27,178	9,870	8,185	1,747	506	5,780	27,102
1945	8,044	13,618	3,402	1,715	697	27,908	10,064	8,251	1,778	485	6,261	27,899
1946	9,960	13,303	2,519	1,936	709	28,815	10,825	8,168	2,005	1,010	5,621	28,815
1947	11,461	11,769	3,105	2,138	1,053	29,962	10,866	8,012	2,447	1,369	5,910	30,057
1948	14,515	13,242	3,575	2,354	1,202	35,421	13,996	8,089	3,298	1,841	7,280	36,125
1949	17,136	15,032	4,564	2,683	1,106	41,121	16,720	8,215	3,519	2,613	9,942	42,756
1950	22,975	17,792	5,733	3,240	1,225	51,622	20,237	8,508	4,160	3,633	13,096	51,574
1951	25,343	19,085	5,911	3,912	1,230	56,312	21,974	8,994	5,269	4,465	13,180	55,994
1952	29,923	24,335	6,863	4,633	1,300	67,910	27,490	9,741	7,262	6,269	15,696	69,094
1953	39,056	22,385	8,557	5,247	1,513	77,768	32,044	10,611	8,686	6,926	17,639	78,784
1954	38,342	29,860	8,378	6,468	1,929	86,292	35,234	12,147	9,503	7,675	18,797	86,497
1955	38,759	32,645	9,433	7,258	2,014	91,440	36,089	13,857	11,217	8,026	19,838	92,408
1956	43,373	33,969	9,779	8,036	2,498	99,225	39,184	15,451	12,482	9,344	21,501	102,886
1957	46,759	37,133	12,548	9,027	2,433	108,662	42,022	17,043	13,636	10,067	33,645	112,847
1958	51,808	34,525	13,640	10,729	2,516	114,108	40,103	19,303	15,172	11,026	25,572	116,355
1959	55,496	36,080	14,522	10,368	2,783	120,136	40,317	20,844	15,819	11,967	29,244	123,506
1960	58,871	38,575	15,696	11,834	2,878	128,776	42,418	23,053	17,282	13,565	29,861	131,587
1961	65,519	40,830	16,372	12,079	2,797	138,665	41,072	24,628	19,541	15,018	35,160	141,770
1962	73,430	42,456	16,549	12,926	3,283	149,852	42,097	27,250	21,417	14,935	40,131	151,085
1963	75,847	43,559	18,134	14,762	3,501	157,182	42,267	29,980	22,850	16,073	41,254	158,687
1964	78,988	45,376	20,948	17,604	3,751	167,888	44,247	31,771	25,880	18,705	43,430	170,681
1965	88,565	39,778	26,712	19,512	4,107	180,143	43,360	34,669	29,133	21,160	49,401	184,840
1966	103,459	45,683	28,753	22,574	4,598	206,655	47,106	37,926	34,016	23,086	56,869	206,665
1967	106,748	52,787	31,461	27,536	7,655	228,146	53,182	41,662	36,746	26,429	61,512	228,174
1968	112,617	56,226	33,135	34,916	11,845	250,738	60,728	43,864	41,224	29,294	65,362	249,909
1969	126,621	54,407	33,035	41,602	17,301	275,081	64,016	47,083	46,441	33,613	74,822	276,131
1970	141,326	62,921	36,905	50,865	23,633	318,189	71,166	51,427	55,839	41,343	87,660	318,907
1971	170,396	68,350	45,583	48,434	32,187	367,252	79,717	54,178	66,341	52,575	107,129	371,620
1972	180,132	73,446	54,131	78,490	34,992	423,999	82,410	62,029	82,472	59,862	125,260	422,890
1973	200,633	69,158	66,711	97,141	37,162	473,840	88,372	65,280	94,547	71,866	144,005	477,331

n.a. denotes 'not applicable' or 'not available'.

(a) From 1900, year ended 30 June. (b) Reimbursements, fees, etc. (c) Revenue from sales, leases, licences and royalties relating to land, mining and timber.

NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT (\$'000)

Year (a)		Net expenditure from loan funds on public works and services (b)						Public debt (at end of year)	
		Railways, tramways and omnibuses	Electricity supply	Harbours, rivers, light- houses, etc.	Water supplies, sewerage, drainage and irrigation	Public buildings	Other	Total	Gross amount outstand- ing	Sinking fund
1860	....	....	....	....	....	....	....	4	....
1870	....	....	....	....	....	....	....	....	....
1880	....	(c) 549	....	(d) 38	....	....	(d) 802	722	(e) 170
1890	....	3	....	6	2	(f) 76	(e) 32	2,735	32
1900	....	302	....	395	949	....	110	1,757	23,349
1910	....	908	....	174	199	152	626	2,058	46,575
1915	....	1,386	....	331	496	162	2,635	5,010	74,045
1916	....	895	....	218	331	81	1,643	3,169	78,279
1917	....	675	....	244	153	47	592	1,710	81,830
1918	....	416	....	170	136	35	1,351	2,108	84,608
1919	....	375	....	140	93	43	1,448	2,099	87,274
1920	....	242	....	204	94	21	4,765	5,327	93,644
1921	....	398	....	237	427	50	4,061	5,173	98,079
1922	....	1,207	....	183	435	89	2,996	4,910	109,920
1923	....	1,359	....	240	402	37	4,740	6,779	116,972
1924	....	1,303	....	278	871	177	5,244	7,874	125,532
1925	....	1,243	....	362	1,301	182	5,110	8,198	128,987
1926	....	1,540	....	439	1,357	156	4,667	8,157	140,022
1927	....	1,559	....	382	884	235	4,901	7,960	141,212
1928	....	1,902	....	530	1,132	256	4,577	8,397	152,856
1929	....	1,825	....	528	1,092	182	4,255	7,882	(g) 138,711
1930	....	1,819	....	529	610	108	4,226	7,291	(g) 142,389
1931	....	878	....	257	420	Cr. (h)	1,457	3,012	153,130
1932	....	263	....	155	1,152	....	1,055	2,624	159,416
1933	....	374	....	485	1,355	69	1,838	4,121	167,029
1934	....	659	....	492	1,606	196	2,344	5,297	171,696
1935	....	997	....	610	2,155	213	1,103	5,076	177,180
1936	....	946	....	602	2,487	169	700	4,903	180,688
1937	....	491	....	352	2,303	178	741	4,064	184,666
1938	....	950	....	201	1,843	183	1,144	4,321	187,424
1939	....	441	....	184	1,777	230	640	3,272	190,945
1940	....	200	....	104	1,615	732	974	3,624	192,461
1941	....	214	18	152	1,649	306	480	2,819	195,583
1942	....	110	25	111	605	70	437	1,359	194,718
1943	....	157	92	133	100	55	217	754	193,976
1944	....	49	31	Cr. 143	75	166	34	212	192,957
1945	....	140	11	61	150	241	492	1,094	191,790
1946	....	142	208	75	473	451	276	1,625	193,852
1947	....	535	332	173	1,453	772	821	4,087	198,005
1948	....	676	1,471	316	1,388	1,097	125	5,074	200,549
1949	....	913	2,131	449	1,626	1,099	942	7,161	207,377
1950	....	4,496	4,691	804	2,002	1,357	2,859	16,209	219,100
1951	....	3,723	6,591	1,164	4,091	2,003	3,081	20,653	246,374
1952	....	15,198	6,684	2,694	4,803	2,729	3,409	35,517	276,577
1953	....	13,533	179	2,422	4,858	5,432	8,787	35,213	306,144
1954	....	11,295	1,406	2,328	3,939	3,144	6,276	28,388	331,565
1955	....	9,752	1,410	1,920	5,661	3,993	6,726	29,462	355,763
1956	....	6,139	2,049	1,638	5,516	4,187	7,098	26,629	377,465
1957	....	5,519	4,200	950	7,119	5,599	9,169	32,556	410,290
1958	....	4,209	2,480	1,398	7,694	5,891	6,599	28,272	436,857
1959	....	5,711	2,200	1,428	8,395	7,410	7,199	32,342	464,237
1960	....	4,953	1,553	1,373	9,547	8,723	6,355	32,504	493,575
1961	....	4,221	400	1,966	10,314	10,479	8,037	35,418	523,070
1962	....	5,432	300	2,587	10,952	12,032	6,449	37,751	555,130
1963	....	6,204	500	2,438	10,770	13,420	5,563	38,894	587,336
1964	....	7,496	....	3,028	10,537	15,630	6,409	43,100	626,045
1965	....	6,800	794	2,822	10,957	19,948	5,457	46,779	665,620
1966	....	7,628	1,434	2,583	12,667	19,908	3,580	47,800	705,514
1967	....	9,068	2,427	1,746	13,642	18,230	5,902	51,015	748,601
1968	....	7,750	4,542	2,402	14,552	18,816	5,115	53,177	792,969
1969	....	10,547	5,679	1,190	12,560	20,116	4,765	54,859	840,343
1970	....	6,331	4,566	2,055	13,330	24,627	8,594	59,504	886,778
1971	....	7,194	27	2,202	15,176	25,549	13,492	63,640	924,111
1972	....	5,919	3,666	1,902	18,369	23,994	32,606	86,456	975,958
1973	....	4,179	4,104	2,371	23,598	32,872	21,882	89,006	1,030,060

(a) From 1900, year ended 30 June. Sinking fund at 31 March from 1900 to 1928. (b) From 1928 includes expenditure from Loan Suspense Account. (c) Total amount for the years 1877 to 1881. (d) Total amount for the years 1872 to 1881. (e) Not available. (f) Includes expenditure prior to 1890. (g) Reduction due to operation of Financial Agreement Act of 1928. (h) Less than \$500.

NATIONAL WELFARE FUND: EXPENDITURE IN WESTERN AUSTRALIA FROM INCEPTION

NOTE. The National Welfare Fund was established, with effect from 1 July 1943, in terms of the *National Welfare Fund Act 1943*. During the first two years of operation, only maternity allowances and funeral benefits were paid from the Fund. Expenditure on these items in Western Australia was \$341,014 in 1943-44 (maternity allowances \$322,710, funeral benefits \$18,304) and \$374,302 in 1944-45 (maternity allowances \$348,164, funeral benefits \$26,138). Under the provisions of the *National Welfare Fund Act 1945*, effective from 1 July 1945, expenditure on age pensions (introduced in 1909), invalid pensions (1910), widows' pensions (1942), and child endowment (1941) became a charge on the Fund. Unemployment, sickness, and special benefits came into operation on 1 July 1945. Hospital benefit was first paid in 1945-46 (in respect of public hospitals from 1 January 1946, and private hospitals from 18 February 1946).

The principal expenditures from the fund are shown separately in the table below. Details of all payments during the five-year period ended 30 June 1972 are shown in the table on page 266.

(\$'000)

Year ended 30 June	Social services				Total expend- iture on social services	Health services					Total expend- iture on health services (c)	Total expend- iture from National Welfare Fund (d)	
	Pensions		Child endow- ment (a)	Un- employ- ment, sickness, and special benefits		Hospital and nursing home benefits	Medical benefits	Pharma- ceutical benefits	Tuber- culosis cam- paign (b)	Milk for school children			
	Age and invalid	Wid- ows*											
1946	3,721	405	2,570	144	7,186	248	....	....	....	248	7,435	
1947	4,010	391	2,958	339	8,165	716	....	....	20	736	8,901	
1948	5,131	484	2,898	203	9,150	730	....	....	2	732	9,883	
1949	5,842	561	3,620	165	10,644	979	....	24	22	1,025	11,670	
1950	6,176	594	4,607	306	12,215	1,000	....	69	148	1,244	13,477	
1951	6,877	632	6,539	242	14,882	1,044	14	496	473	2,047	16,955	
1952	8,213	733	6,956	118	16,620	1,023	151	1,004	627	134	2,970	19,625
1953	9,684	808	8,106	444	19,681	1,102	237	1,108	1,201	185	3,867	23,584
1954	10,750	870	7,766	399	20,435	1,314	590	1,396	1,214	213	4,763	25,235
1955	11,519	902	8,138	286	21,516	1,491	1,156	1,537	967	253	5,432	26,967
1956	13,363	1,062	9,368	374	24,887	1,559	1,461	1,626	1,017	273	5,958	30,845
1957	14,508	1,225	8,923	896	26,281	1,544	1,590	1,624	1,123	316	6,222	32,503
1958	16,154	1,415	9,143	1,265	28,725	1,858	1,746	2,006	1,041	305	6,983	35,708
1959	17,244	1,601	10,396	1,673	31,681	2,571	1,917	2,794	1,272	364	8,948	40,679
1960	19,833	1,827	9,720	1,504	33,652	3,351	2,241	3,178	1,163	458	10,427	44,079
1961	21,586	2,104	11,402	1,309	37,180	3,817	2,339	3,630	1,111	448	11,386	48,812
1962	24,344	2,371	10,205	1,887	39,575	3,996	2,455	4,809	873	526	12,695	52,270
1963	25,582	2,377	10,485	2,006	41,203	4,189	2,657	5,161	885	584	13,501	54,705
1964	27,373	3,115	12,994	1,978	46,223	4,705	2,808	5,242	839	615	14,238	60,460
1965	29,413	3,463	13,406	1,401	48,450	4,987	3,716	5,294	822	637	15,486	64,635
1966	30,760	3,602	13,624	872	49,648	5,286	4,345	5,870	758	619	16,906	67,316
1967	33,794	4,011	15,498	855	55,001	5,881	4,944	6,719	600	698	18,998	74,666
1968	36,418	4,346	14,845	758	57,295	6,598	5,265	7,117	862	850	20,860	78,894
1969	39,404	4,786	15,540	795	61,729	7,401	5,600	8,702	645	797	23,340	85,828
1970	44,637	5,600	17,894	1,039	70,725	9,153	6,373	9,836	828	797	27,262	98,577
1971	48,979	6,172	16,423	1,699	75,279	10,256	9,782	11,215	800	835	33,246	109,216
1972	57,374	7,180	18,188	4,298	89,623	14,492	13,800	12,418	907	997	43,032	133,770
1973	76,188	10,064	21,407	8,372	119,622	19,062	15,958	13,258	824	1,086	50,827	171,763

(a) A number of endowments are paid every twelve weeks. Although in most years there are four such payments, there are some years in which five payments are made.

(b) Comprises amounts paid to individuals in the form of allowances and to the State Government as reimbursements for expenditure incurred in the provision and maintenance of facilities.

(c) Excludes some relatively minor expenditures not allocable among States. In 1972-73 such costs, for Australia as a whole, amounted to \$3.57 million and comprised \$1.14 million for the supply of blood products; radio-active isotopes, \$1.33 million; hearing aids for school children and pensioners, \$0.54 million; poliomyelitis vaccine, \$0.15 million; and other vaccines, \$0.42 million.

(d) See footnote (c).

SOCIAL SERVICE BENEFICIARIES AND REPATRIATION PENSIONS: WESTERN AUSTRALIA

Year ended 30 June	Social service benefits							Repatriation pensions				
	Pensioners (a)				Endowed children (a)			Un-employment benefit (h)	War		Service	
	Age (b) (c)	Invalid (b) (c) (d)	Total	Widow	Under 16 years of age (e) (f)	Students (g)	Total		Number (a) (i)	Amount paid \$'000	Number (a) (j)	Amount paid \$'000
1910	2,361	n.a.	2,361									
1911	2,976	179	3,155									
1912	3,224	374	3,598									
1913	3,484	574	4,058						n.a.	n.a.		
1914	3,909	766	4,675									
1915	4,153	935	5,088									
1916	4,199	1,057	5,256						521	17		
1917	4,353	1,200	5,553						3,654	148		
1918	4,401	1,313	5,714						9,836	469		
1919	4,518	1,500	6,018						17,488	922		
1920	4,791	1,788	6,579						22,311	1,087		
1921	5,002	2,004	7,006						23,235	1,501		
1922	5,316	2,022	7,338						23,561	1,468	n.a.	n.a.
1923	5,599	2,063	7,662						23,878	1,430		
1924	6,099	2,250	8,349						24,301	1,430		
1925	6,448	2,392	8,840						25,138	1,439		
1926	6,940	2,632	9,572						25,927	1,521		
1927	7,326	2,699	10,025	n.a.	n.a.		n.a.	n.a.	26,689	1,535		
1928	7,713	2,866	10,579						27,495	1,545		
1929	8,256	3,029	11,285						28,084	1,575		
1930	8,913	3,284	12,197						28,407	1,586		
1931	10,461	3,554	14,015						28,063	1,575		
1932	11,458	3,790	15,248						26,345	1,397		
1933	11,097	3,827	14,924						25,475	1,259		
1934	11,854	4,122	15,976						24,940	1,255		
1935	12,840	4,290	17,130						24,436	1,304		
1936	13,740	4,482	18,222						23,882	1,326	375	5
1937	14,453	4,634	19,087			n.a.			22,886	1,361	923	47
1938	15,332	4,863	20,195						23,375	1,379	1,204	73
1939	16,278	5,116	21,394						22,617	1,394	1,454	92
1940	19,024	3,454	22,478						21,449	1,370	1,489	103
1941	19,423	3,425	22,848						20,388	1,343	1,545	112
1942	19,156	3,557	22,713		68,533		68,533		19,757	1,337	1,561	129
1943	18,575	3,580	22,155	2,596	65,777		65,777		20,245	1,506	1,454	147
1944	18,109	3,443	21,552	2,796	66,938		66,938		22,511	1,884	1,369	144
1945	17,713	3,414	21,127	2,894	68,316		68,316		27,686	2,105	1,343	144
1946	18,797	3,538	22,335	2,870	69,325		69,325	422	37,921	2,530	1,403	173
1947	21,162	4,002	25,164	2,570	71,968		71,968	1,095	42,127	2,856	1,580	192
1948	22,210	4,387	26,597	2,719	75,186		75,186	409	44,818	3,000	1,715	290
1949	23,739	4,340	28,079	2,883	79,693		79,693	126	46,785	3,516	1,832	301
1950	24,316	4,294	28,610	2,876	133,557		133,557	267	48,878	3,776	1,953	331
1951	24,317	4,184	28,501	2,789	172,186		172,186	60	51,027	4,545	2,022	369
1952	24,782	3,964	28,746	2,676	183,257		183,257	57	52,071	5,429	2,136	449
1953	25,679	3,996	29,675	2,686	192,991		192,991	844	52,607	5,843	2,343	556
1954	27,248	4,101	31,349	2,753	202,098		202,098	427	53,352	6,174	2,468	605
1955	28,833	4,191	33,024	2,848	212,025		212,025	157	54,117	6,877	2,692	723
1956	30,244	4,425	34,669	3,015	220,792		220,792	473	54,427	6,902	3,648	964
1957	32,192	5,039	37,231	3,243	230,922		230,922	1,940	54,987	7,169	4,306	1,095
1958	33,124	5,519	38,643	3,542	237,732		237,732	2,330	55,251	8,017	4,672	1,395
1959	34,629	5,941	40,570	3,833	245,090		245,090	2,852	56,008	7,893	5,009	1,552
1960	36,575	6,152	42,727	4,039	250,449		250,449	2,512	56,644	8,471	5,344	1,751
1961	37,656	6,945	44,601	4,348	257,037		257,037	2,154	57,123	9,310	6,101	2,102
1962	39,104	7,826	46,930	4,570	266,067		266,067	2,932	57,947	10,177	7,115	2,687
1963	40,661	8,170	48,831	4,486	270,736		270,736	2,674	57,580	10,527	7,526	2,927
1964	41,819	8,306	50,125	4,734	275,910	7,865	283,775	2,677	57,047	11,564	7,754	3,177
1965	42,706	8,615	51,321	4,926	279,642	8,844	288,486	1,679	55,920	11,447	7,780	3,320
1966	43,876	8,575	52,451	5,071	286,534	8,769	295,303	785	54,560	12,637	7,757	3,571
1967	45,741	8,307	54,048	5,228	295,628	10,697	306,325	718	52,967	11,889	7,674	3,612
1968	48,850	8,310	57,160	5,482	306,492	10,999	317,491	608	51,193	11,934	7,586	3,777
1969	50,432	8,413	58,845	5,559	318,147	11,446	329,593	524	49,526	13,061	7,298	4,071
1970	56,017	7,933	63,950	6,086	322,058	11,539	333,597	474	47,993	12,811	7,783	4,491
1971	58,224	8,155	66,379	6,392	333,848	13,737	347,585	872	46,514	13,140	7,767	4,769
1972	60,523	8,485	69,008	6,795	343,455	15,452	358,907	2,808	45,079	14,413	7,864	5,298
1973	68,701	9,518	78,219	7,948	346,769	17,821	364,590	4,960	44,093	15,462	9,599	7,394

n.a. denotes 'not applicable'.

(a) Number at 30 June. (b) Figures for dates prior to 30 June 1957 exclude pensioners in benevolent homes. (c) During 1939-40 all invalid pensions in force were specially reviewed, and at 30 June 1940 all those pensioners who had become qualified for age pension by reason of age and residence were transferred to the age pension category. (d) Figures from 30 June 1968 include recipients of sheltered employment allowances. (e) Endowed children in institutions are excluded from figures shown for dates prior to 30 June 1957; at that date there were 3,347 such children. (f) From the commencement of the child endowment scheme on 1 July 1941 until 20 June 1950, endowment was not paid in respect of the first or only child of a family. (g) Persons aged 16 and under 21 years who are receiving full-time education at a school, college or university and are not in employment or engaged in work on their own account. (h) Average of number of persons on benefit at end of each week. (i) Includes pensions paid to incapacitated ex-servicemen and to the dependants of incapacitated or deceased ex-servicemen; particulars of ex-servicemen are included where relevant. (j) Comprises pensions paid to ex-servicemen and ex-servicewomen, and their dependants.

BANKING AND INSURANCE

Year	Trading banks			Savings banks (c)		Insurance			
	De-positors' balances (a)	Loans (other than loans to authorised dealers in the short-term money market), advances and bills discounted (a)	Weekly debits to customers' accounts (b)	Operative accounts at end of year	Depositors' balances at end of year	Life		General (e) (f)	
						Sum insured under policies existing at end of year (d)		Premiums	Claims
						Ordinary (including super-annuation)	Industrial		
	\$'000	\$'000	\$m		\$'000	\$'000	\$'000	\$'000	\$'000
1870	(g)	(g)		895	27	(g)	(g)		
1880	(g)	(g)		1,299	45	(g)	(g)		
1890	1,904	2,809		3,014	69	(g)	(g)		
1900	8,781	5,514		33,646	2,598	6,916	439	(g)	(g)
1910	12,627	12,228		84,262	6,955	12,717	1,170		
1915	15,229	17,418		144,777	10,285	16,058	2,451		
1916	16,099	18,635		156,458	10,667	16,660	2,731		
1917	17,178	18,285		171,207	11,683	17,239	3,042	721	196
1918	19,374	19,170		182,140	12,580	18,103	3,456	783	303
1919	21,606	20,829		196,584	14,005	19,851	3,907	803	295
1920	24,742	21,594		211,415	14,516	21,640	4,089	1,080	368
1921	24,004	21,833		226,468	15,433	24,183	4,699	1,112	684
1922	24,519	21,531		237,505	15,519	25,586	5,189	1,195	658
1923	25,349	22,796		250,214	16,067	27,544	5,707	1,242	435
1924	26,245	23,313		264,842	16,436	29,310	6,360	1,528	543
1925	27,200	24,095		277,701	16,608	31,739	6,811	1,669	724
1926	(h) 28,887	(h) 25,745	(g)	292,353	17,940	33,970	7,317	1,832	901
1927	29,301	29,233		309,176	13,389	36,279	8,042	(h) 831	(h) 432
1928	31,025	30,592		330,284	21,291	38,926	8,750	2,111	1,200
1929	26,811	34,480		350,046	23,218	41,268	9,366	2,391	1,205
1930	25,524	41,773		367,665	23,457	41,656	9,003	2,452	1,163
1931	24,455	41,635		371,662	21,735	39,906	8,353	1,914	971
1932	28,563	39,292		206,997	20,435	39,181	8,585	1,693	655
1933	29,785	38,433		194,095	20,129	39,447	8,918	1,786	796
1934	32,853	38,742		192,915	20,798	40,631	9,394	1,746	801
1935	36,206	41,061		197,611	21,858	42,899	9,945	1,929	910
1936	38,731	43,232		208,990	23,034	45,608	10,685	2,176	1,015
1937	39,463	44,532		217,247	23,670	48,857	11,373	2,410	1,366
1938	41,230	45,141		225,118	24,075	51,653	11,944	2,641	1,526
1939	41,181	47,774		232,564	24,792	53,853	12,609	2,746	1,462
1940	42,219	47,529		233,649	23,720	54,708	13,086	2,884	1,460
1941	47,099	45,617		238,820	25,042	55,842	13,875	2,792	1,236
1942	51,918	43,638		250,153	27,642	55,881	15,311	2,806	1,245
1943	61,135	37,827		279,469	37,769	57,865	16,656	2,347	1,014
1944	71,529	33,462		301,225	51,581	61,380	17,962	2,369	897
1945	74,846	31,504		316,565	63,526	66,254	19,024	2,565	1,154
1946	(i) 66,652	(i) 33,726	(j) 11.6	340,737	76,578	77,608	21,036	2,890	1,223
1947	72,490	45,388	14.2	349,091	73,250	88,016	23,054	3,503	1,737
1948	82,032	48,754	17.4	358,709	72,365	98,891	25,139	4,188	2,089
1949	100,971	49,904	21.4	365,130	75,070	111,213	27,127	5,071	2,053
1950	116,458	55,301	27.4	378,670	79,225	126,332	29,503	5,913	2,440
1951	149,244	66,680	38.6	392,790	89,345	148,724	32,460	7,360	3,341
1952	170,923	83,353	43.6	403,678	94,342	171,007	35,257	9,358	5,261
1953	170,234	87,353	44.2	414,288	99,589	195,499	38,110	10,736	5,453
1954	181,863	106,429	50.8	422,480	105,229	221,568	40,246	11,427	5,276
1955	180,895	137,830	52.4	426,637	107,258	251,543	41,487	12,563	6,281
1956	174,070	142,156	53.9	446,419	115,868	282,139	42,114	13,546	7,126
1957	185,576	135,074	57.1	473,548	125,386	317,264	42,535	13,792	8,202
1958	186,478	141,198	60.4	497,690	131,896	352,360	43,003	15,601	7,807
1959	180,300	147,106	61.5	527,079	142,998	396,322	43,279	17,169	9,165
1960	192,076	142,064	69.7	550,966	157,246	459,740	44,325	19,951	10,671
1961	190,094	146,244	75.7	577,619	161,424	523,636	44,745	21,607	12,770
1962	209,274	139,204	80.4	625,070	181,056	597,892	46,754	22,914	12,255
1963	219,952	153,528	88.2	683,417	208,812	679,161	47,983	24,761	14,723
1964	242,268	164,878	96.4	736,009	239,766	774,550	50,588	26,285	15,629
1965	272,430	186,000	106.3	786,340	261,654	881,652	53,565	28,224	16,108
1966	310,432	195,190	122.4	848,562	292,871	1,005,119	57,916	32,385	18,247
1967	355,899	212,023	138.6	905,349	330,807	1,164,613	63,960	36,535	20,995
1968	398,837	252,627	169.1	970,120	373,602	1,383,330	69,961	41,724	24,218
1969	462,559	280,147	209.0	1,036,180	412,984	1,651,918	75,605	47,566	28,769
1970	558,017	323,824	246.4	1,096,466	431,877	1,948,690	83,255	55,641	31,237
1971	544,732	351,110	295.3	1,153,420	464,611	*2,307,828	91,293	63,873	35,793
1972	552,546	357,410	318.4	1,205,448	511,457	2,670,637	95,137	71,061	40,025
1973	693,456	443,330	355.9	1,250,576	608,133	(k)	(k)	73,558	42,420

(a) Average based on amounts as at close of business each week. From 1927, year ended 30 June. (b) Weekly average for year ended 30 June. Excludes debits to Australian Government accounts at city branches. From 1946-47 includes The Rural and Industries Bank of Western Australia (Rural Department). (c) From 1900, year ended 30 June. (d) Actual date varies according to the financial year of individual insurance companies. (e) From 1927, year ended 30 June. (f) Excludes transactions of The Motor Vehicle Insurance Trust, which became the sole insurer in respect of motor vehicle (third party) insurance from 1 July 1949. (g) Not available. (h) Six months ended 30 June. (i) Average for nine months to 30 June. (j) Ten months ended June 1946. (k) Not available at time of publication.

TRANSPORT ; CUSTOMS AND EXCISE

Year	State Government railways (a)				Private railways	Customs and excise revenue (b)			Shipping (b) (c)	
	Route miles at end of year (d)	Operating revenue (e)	Operating expenses (e)	Paying goods and livestock carried (e)	Route miles at end of year (b) (f)	Customs	Excise	Total	Clearances to ports outside the State	
									Number	Net tons
		\$'000	\$'000	'000 tons		\$'000	\$'000	\$'000		'000
1870 ....	....	....	....	....	....	81	....	81	131	68
1880	34	5	8	2	38	186	....	186	168	126
1890	188	90	103	61	385	356	....	356	267	420
1900	1,355	2,519	1,723	1,384	623	1,889	63	1,952	747	1,606
1910	2,145	3,275	2,194	2,242	902	1,543	213	1,756	726	2,372
1915	3,332	4,116	2,996	2,524	976	1,529	234	1,763	655	2,384
1916	3,332	4,176	3,023	2,555	993	1,513	298	1,811	689	2,493
1917	3,425	3,755	2,897	2,400	1,010	1,334	284	1,618	731	2,558
1918	3,491	3,633	2,903	2,259	983	794	341	1,135	315	1,102
1919	3,539	3,746	3,135	2,379	898	801	549	1,350	636	2,112
1920	3,539	4,584	4,001	2,614	918	1,311	799	2,110	729	2,659
1921	3,539	5,440	4,844	2,604	895	2,018	1,176	3,194	789	2,826
1922	3,539	5,656	4,658	2,548	878	1,550	1,148	2,698	874	3,231
1923	3,555	5,832	4,421	2,624	865	2,005	1,145	3,150	709	3,088
1924	3,629	6,455	4,596	3,023	812	2,377	1,190	3,567	673	3,101
1925	3,733	6,719	4,710	3,285	854	2,707	1,177	3,884	805	3,658
1926	3,865	6,675	5,018	3,237	884	2,791	1,249	4,040	685	3,256
1927	3,918	7,216	5,371	3,439	872	3,356	1,332	4,688	799	3,797
1928	3,977	7,716	5,822	3,698	838	3,454	1,429	4,883	812	3,806
1929	4,079	7,600	6,111	3,670	842	3,788	1,431	5,219	808	3,674
1930	4,111	7,318	6,226	3,530	847	3,882	1,527	5,409	794	3,932
1931	4,181	6,398	5,222	3,154	826	2,166	1,304	3,470	742	3,686
1932	4,235	5,845	4,247	2,848	830	2,117	1,327	3,444	694	3,530
1933	4,338	5,864	4,223	2,840	845	2,430	1,719	4,149	691	3,564
1934	4,360	5,839	4,373	2,652	854	2,574	1,628	4,202	683	3,568
1935	4,359	6,624	4,765	2,903	869	2,766	1,736	4,502	730	3,775
1936	4,358	6,892	4,976	2,887	880	3,239	1,830	5,069	725	3,831
1937	4,357	6,924	5,240	2,798	873	3,504	1,926	5,430	761	3,754
1938	4,376	7,356	5,420	3,062	854	3,710	1,955	5,665	866	4,111
1939	4,378	7,198	5,823	2,859	844	3,381	2,218	5,599	930	4,327
1940	4,381	7,112	5,657	2,659	831	3,769	2,395	6,164	805	3,751
1941	4,381	7,144	5,516	2,604	815	2,934	3,149	6,083	556	3,087
1942	4,381	7,993	6,052	2,638	818	2,273	3,149	6,030	492	2,508
1943	4,381	8,836	6,895	2,505	849	1,646	5,569	7,215	312	1,467
1944	4,381	8,773	7,592	2,560	829	1,661	6,225	7,886	385	1,580
1945	4,381	8,552	7,529	2,904	798	1,783	5,705	7,488	382	1,528
1946	4,381	8,213	8,053	2,728	706	2,707	6,508	9,215	490	2,273
1947	4,348	8,092	8,848	2,577	759	4,377	6,894	11,271	572	2,646
1948	4,348	9,198	11,140	2,858	739	5,784	9,264	15,048	752	3,431
1949	4,321	10,430	13,405	2,737	734	6,987	10,254	17,241	950	4,678
1950	4,252	12,944	15,003	2,843	774	10,166	10,243	21,109	1,006	5,272
1951	4,228	14,392	17,238	3,033	752	10,839	11,973	22,812	1,060	5,552
1952	4,113	18,327	21,331	3,063	752	14,045	16,312	30,357	1,045	5,524
1953	4,108	15,945	24,175	2,619	724	9,908	18,395	28,303	1,025	5,407
1954	4,111	22,749	27,512	3,206	758	12,241	19,447	31,688	1,005	5,320
1955	4,111	25,061	27,871	3,407	748	12,196	21,812	34,008	1,136	6,144
1956	4,119	26,548	29,986	3,793	726	8,473	24,092	32,565	1,268	6,776
1957	4,117	28,088	32,023	4,223	706	5,504	30,078	35,582	1,244	6,531
1958	4,117	25,950	29,685	3,589	575	5,476	32,547	38,023	1,219	6,499
1959	4,117	27,400	29,865	3,913	575	4,800	32,398	37,198	1,282	6,607
1960	4,120	30,077	30,816	4,533	517	5,614	33,634	39,248	1,403	7,234
1961	4,123	33,076	31,103	4,833	469	7,470	33,835	41,305	1,598	8,547
1962	(g) 3,851	35,608	31,527	5,342	(h) 558	7,156	35,705	42,861	1,687	8,962
1963	(g) 3,797	33,429	31,150	4,793	552	8,996	35,944	44,940	1,528	8,252
1964	(g) 3,677	35,190	32,250	5,187	413	10,369	37,839	48,208	1,580	8,627
1965	3,733	36,686	32,920	5,229	(i) 21	10,692	43,349	54,041	1,560	8,593
1966	3,747	43,669	35,985	6,384	(j) 286	15,251	53,536	68,787	1,711	9,528
1967	3,815	49,120	40,170	7,873	283	13,569	58,176	71,745	1,690	10,977
1968	3,815	52,773	42,623	8,910	283	19,468	62,903	82,371	1,770	12,916
1969	3,826	50,558	44,503	8,934	(k) 548	21,202	69,289	90,490	1,848	15,372
1970	3,828	57,240	48,550	10,665	549	24,649	76,637	101,286	2,165	21,005
1971	3,837	61,917	53,205	13,244	549	32,262	88,978	121,240	2,499	27,765
1972	3,800	64,846	57,112	13,648	549	30,072	101,883	131,955	2,425	28,734
1973	3,832	64,793	61,011	13,489	(l) 758	25,715	106,055	131,770	2,481	34,291

(a) From 1900, year ended 30 June. (b) From 1915, year ended 30 June. (c) From 1966-67 excludes vessels of 200 net tons and under. (d) Open for general and passenger traffic. (e) From 1942 includes operations of Railway Road Services, which began in November 1941. (f) From 1900 to 1964 includes 277 miles of line open for general and passenger traffic. (g) Decrease due to proclamations of closure issued by authority of the *Railways (Cue-Big Bell and other Railways) Discontinuance Act, 1960*. (h) Increase due to the transfer of all government-operated timber railways to private control. (i) Decrease due to transfer of Midland Railway Company to Western Australian Government Railways, and to closure of timber and mining railways. (j) Increase due to opening of Goldsworthy-Port Hedland, Tom Price-Dampier and Westmine-Tilley iron-ore railways. (k) Increase due to opening of Newman-Port Hedland iron-ore railway. (l) Increase due to opening of Pannawonica-Cape Lambert iron-ore railway and extensions to Goldsworthy and Tom Price railways.

MOTOR VEHICLE REGISTRATIONS; EXPORTS OF WHEAT

Year	New motor vehicles registered (a)				Motor vehicles on register (b)				Wheat exports (c)	
	Motor cars (d)	Light and heavy commercial; omnibuses	Motor cycles (e)	Total	Motor cars (f)	Light and heavy commercial; omnibuses	Motor cycles (e)	Total	Quantity ('000 bushels)	Value (\$'000)
1860									(g)	(g)
1870 ....									....	....
1880									15	8
1890 ....									....	....
1900					n.a.				1	(g)
1910									2,015	813
1915									(g)	(g)
1916									3,931	2,047
1917						n.a.	n.a.	n.a.	7,036	3,239
1918					2,538				1,694	875
1919					2,938				1,651	800
1920					3,404				9,151	5,083
1921					4,181				6,576	5,860
1922					4,403				10,357	6,076
1923	n.a.	n.a.	n.a.	n.a.	7,280				5,363	2,942
1924					11,162				10,925	5,085
1925					15,261				14,986	10,316
1926					20,011				13,175	8,373
1927					19,451	5,819			16,330	9,334
1928					24,205	8,104			26,194	13,989
1929					27,174	9,767			26,091	13,384
1930					31,130	11,358	7,707	50,195	24,953	12,258
1931					27,741	10,880	6,777	45,398	42,440	10,577
1932					28,608	12,094	6,700	47,402	36,868	10,647
1933					27,969	12,626	6,700	47,295	30,695	9,323
1934					28,761	13,937	6,284	48,982	23,360	6,834
1935					30,578	15,530	6,597	52,705	24,936	7,844
1936					32,329	17,362	6,861	56,552	14,897	5,607
1937					34,180	19,919	6,977	61,076	13,780	7,255
1938					36,386	22,596	7,079	66,061	22,038	9,667
1939	3,297	1,814	568	5,679	38,039	24,441	7,199	69,679	22,614	6,055
1940	2,871	1,517	399	4,787	38,907	25,026	6,789	70,722	15,330	4,669
1941	1,015	632	200	1,847	36,995	24,788	6,704	68,487	14,856	5,858
1942	250	353	74	677	29,022	21,625	4,057	54,704	9,774	4,021
1943	218	151	57	426	29,750	21,189	3,935	54,874	5,138	2,111
1944	19	1,102	109	1,230	30,295	22,459	4,324	57,078	12,057	5,813
1945	40	597	192	829	30,635	23,943	4,501	59,079	23,590	14,955
1946	101	456	271	828	31,408	28,904	6,799	67,111	13,510	11,696
1947	1,354	1,126	678	3,158	32,879	8,199	73,175	6,802	8,964	8,964
1948	2,963	1,975	1,059	5,997	35,596	35,285	8,877	79,758	19,312	33,809
1949	4,684	3,122	1,769	9,575	40,119	38,901	10,974	89,994	18,401	28,100
1950	8,926	4,707	2,346	15,979	48,632	43,206	12,897	104,735	21,510	33,384
1951	8,201	6,610	2,802	17,613	56,235	47,908	14,535	118,678	30,510	51,688
1952	8,836	5,750	2,740	17,326	64,277	52,627	16,047	132,951	26,823	45,728
1953	6,879	4,881	1,416	13,176	69,917	56,445	15,565	141,927	23,319	40,347
1954	9,926	5,601	1,258	16,785	78,312	60,362	15,243	153,917	6,800	11,272
1955	12,394	5,993	1,202	19,589	90,255	63,870	14,662	168,787	19,335	27,478
1956	10,100	5,203	1,089	16,392	99,206	62,809	12,959	174,974	22,773	28,860
1957	9,321	4,418	1,192	14,931	104,506	63,315	12,731	180,552	46,796	61,291
1958	10,140	5,562	1,702	17,404	111,825	63,598	12,631	188,054	26,644	40,861
1959	10,389	5,140	2,071	17,600	119,957	65,588	12,814	198,359	23,503	33,113
1960	13,492	5,695	1,949	21,136	130,476	68,702	12,876	212,054	36,713	49,442
1961	15,161	5,542	1,080	21,783	141,612	70,974	12,589	225,175	52,480	71,280
1962	17,082	5,833	902	23,817	155,447	74,224	12,390	242,061	73,883	104,356
1963 (h)	23,175	6,367	754	30,296	169,800	75,500	11,500	256,800	50,720	72,197
1964 (h)	24,958	7,013	628	32,599	186,200	77,700	10,200	274,100	55,022	77,881
1965 (h)	23,304	6,897	553	30,754	197,800	78,500	8,900	285,200	40,507	56,955
1966 (h)	23,418	9,170	706	33,294	212,600	83,300	8,400	304,300	69,372	96,515
1967 (h)	27,922	9,404	1,158	38,484	231,200	86,300	8,400	325,900	84,980	126,918
1968 (h)	33,368	10,448	1,525	45,341	252,300	90,800	8,900	352,000	87,200	121,764
1969 (h)	35,379	11,018	1,539	47,936	275,300	94,500	9,600	379,400	55,901	77,987
1970 (h)	37,764	11,138	1,945	50,847	301,000	99,900	10,800	411,700	66,682	86,593
1971 (h)	37,769	10,872	2,718	51,359	328,500	104,900	12,200	445,600	98,138	130,564
1972 (h)	37,273	9,820	3,985	51,078	346,346	105,402	14,458	466,206	95,074	128,132
1973	36,905	11,425	4,914	53,244	364,241	109,427	17,390	491,058	82,671	111,744

n.a. denotes 'not applicable' or 'not available'.

(a) Year ended 30 June. (b) From 1929, at 30 June; for earlier years, at various dates. For years before 1946, excludes Commonwealth-owned vehicles; from 1946, includes Commonwealth-owned vehicles other than those of defence services. From 1956, new series based on the results of the periodic census of motor vehicles. (c) From 1915, year ended 30 June. (d) From 1959, includes station wagons previously included with commercial vehicles. (e) Including motor scooters. (f) From June 1956, includes station wagons previously included with commercial vehicles. (g) Less than 500. (h) Figures for motor vehicles on register have been revised in accordance with the final results of the census of motor vehicles on register at 30 September 1971.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (a)	Wool				Meats—Fresh, chilled or frozen					
	Greasy (b)		Degreased		Beef and veal		Mutton and lamb		Pigmeat	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	tonnes	\$'000	tonnes	\$'000	'000 lb	\$'000	'000 lb	\$'000	'000 lb	\$'000
1840 ...	23	5	—	—	....	....	....	....	....	....
1850 ...	141	31	—	—	....	....	....	....	....	....
1860 ...	298	99	—	—	....	....	....	....	....	....
1870 ...	811	179	(c)	(c)	....	....	....	....	....	....
1880 ...	1,970	543	—	—	....	....	....	....	....	....
1890 ...	3,161	523	—	—	....	....	....	....	....	....
1900 ...	3,927	505	198	36	(d)	(d)	(d)	(d)	(d)	(d)
1910 ...	11,692	1,894	191	40	....	....	....	....	....	....
1915 ...	10,844	1,626	45	10	....	....	....	....	....	....
1916 ...	13,095	2,517	107	29	4,311	176	41	2	....	....
1917 ...	11,035	2,831	35	10	....	....	....	....	....	....
1918 ...	4,771	1,056	51	15	1,188	36	115	4	324	15
1919 ...	13,164	3,775	283	129	239	6	138	4	133	6
1920 ...	25,530	7,218	1,504	657	662	33	....	....	....	....
1921 ...	19,073	4,593	492	183	5,762	248	118	7	45	5
1922 ...	24,726	5,673	1,896	731	2,479	79	....	....	....	....
1923 ...	17,815	5,986	1,202	479	9,955	305	866	55	1	(e)
1924 ...	19,214	8,028	688	446	10,647	272	446	26	....	....
1925 ...	15,296	7,030	586	443	7,106	198	....	....	....	....
1926 ...	21,783	6,703	756	353	8,119	240	....	....	....	....
1927 ...	23,646	6,694	752	342	6,697	198	....	....	....	....
1928 ...	27,398	9,734	381	192	11,026	272	227	15	....	....
1929 ...	25,493	7,615	382	207	9,313	226	....	....	....	....
1930 ...	28,022	5,422	465	136	11,381	272	....	....	....	....
1931 ...	31,478	4,652	629	121	11,315	244	855	35	209	7
1932 ...	29,298	4,540	892	151	11,240	235	2,113	103	1,221	53
1933 ...	30,931	4,871	1,222	236	14,406	276	384	15	949	37
1934 ...	31,751	9,131	1,237	491	12,602	234	1,352	49	668	29
1935 ...	36,537	6,479	1,565	348	12,072	233	4,979	236	1,194	55
1936 ...	35,602	8,892	1,398	451	17,036	321	5,557	282	1,550	65
1937 ...	26,455	7,854	1,110	475	11,227	249	4,555	247	1,306	67
1938 ...	24,245	5,877	1,227	446	11,445	314	8,705	470	823	52
1939 ...	31,030	6,072	1,636	469	16,501	497	11,775	638	1,278	80
1940 ...	29,610	7,603	1,655	661	10,639	329	10,285	533	4,990	324
1941 ...	9,064	2,601	1,270	518	12,309	407	9,691	496	13,261	851
1942 ...	34,355	9,836	2,235	1,030	7,883	327	8,122	435	10,295	682
1943 ...	12,934	4,163	1,239	594	(e)	(e)	8,785	458	2,321	155
1944 ...	31,145	10,842	2,095	917	3,185	190	14,691	763	3,457	238
1945 ...	23,613	8,082	2,216	1,025	2,651	168	8,824	410	3,741	254
1946 ...	49,070	17,136	5,328	2,778	9,517	558	5,002	275	7,497	545
1947 ...	34,104	15,561	7,918	4,960	14,017	691	8,997	409	2,880	248
1948 ...	36,380	27,801	7,291	5,443	14,007	604	11,198	584	669	53
1949 ...	38,972	36,717	6,163	6,352	17,760	840	10,157	608	1,375	179
1950 ...	37,832	40,071	7,934	10,852	19,015	1,183	5,274	485	359	59
1951 ...	36,619	96,493	5,014	16,066	16,973	1,221	2,070	217	616	113
1952 ...	41,483	57,291	5,150	10,389	13,290	1,135	2,301	301	934	232
1953 ...	45,772	67,759	5,717	11,363	11,058	1,437	14,527	1,463	1,020	303
1954 ...	45,677	71,346	5,406	10,914	13,555	1,748	7,295	875	474	152
1955 ...	43,796	59,296	6,015	11,267	14,939	2,038	7,109	1,328	2,313	532
1956 ...	51,387	57,894	7,595	12,419	16,757	2,343	14,556	2,156	1,637	482
1957 ...	49,252	71,251	8,503	16,259	9,099	1,221	12,761	1,741	1,615	588
1958 ...	43,750	57,224	8,417	15,462	24,305	3,302	11,205	1,900	5,124	1,462
1959 ...	50,408	46,313	9,872	12,224	23,226	4,342	21,923	3,177	4,371	1,178
1960 ...	50,396	58,137	12,442	19,820	29,977	6,742	19,258	2,378	2,618	953
1961 ...	59,830	59,290	11,851	15,552	27,365	6,141	25,059	3,901	4,176	1,501
1962 ...	62,094	68,177	11,490	15,688	27,654	6,299	18,669	2,436	6,946	2,025
1963 ...	59,617	66,401	11,441	15,706	38,069	9,382	16,376	2,401	4,543	1,404
1964 ...	72,240	97,138	10,388	17,101	45,257	11,497	11,872	1,895	1,898	718
1965 ...	68,861	83,030	10,245	15,264	42,682	11,730	11,111	1,981	1,259	516
1966 ...	87,853	101,905	9,845	13,223	39,937	12,108	22,750	4,357	926	376
1967 ...	97,098	114,052	9,783	12,943	37,284	11,987	21,278	3,723	1,245	470
1968 ...	113,224	113,868	11,484	12,549	37,084	12,995	28,998	4,745	1,205	474
1969 ...	132,034	142,065	12,354	15,885	44,555	16,939	47,450	7,218	1,416	564
1970 ...	120,224	117,952	12,554	17,024	52,128	21,508	65,391	11,271	3,169	1,175
1971 ...	119,137	89,752	9,251	8,537	44,658	17,626	53,448	9,396	2,482	895
1972 ...	145,803	109,263	13,481	11,197	53,870	22,528	94,786	17,645	5,518	1,995
1973 ...	136,110	204,455	10,346	16,264	73,468	36,614	87,861	26,103	16,820	6,382

(a) From 1915, year ended 30 June. (b) For 1890 and earlier years includes degreased wool for which figures are not available separately. (c) See note (b). (d) Separate particulars not available. Total exports of fresh meats were 184,379 lb valued at \$9,164. (e) Less than 500.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (a)	Flour		Butter		Potatoes		Fresh fruit (b)	Cattle	Sheep
	Quantity	Value	Quantity	Value	Quantity	Value	Value	Value	Value
	short tons (c)	\$'000	cwt	\$'000	tons	\$'000	\$'000	\$'000	\$'000
1850
1860	70	(e)	....	(e)	(e)
1870	12	....	....	26	(e)	....	....	4
1880	(e)
1890	(d)	....	....	....	....	....	....	(e)
1900	52	....	76	111	1	1	1	2
1910	2,821	49	1,507	18	(e)	11	16	9
1915	2,890	52	15	69	1	93	75	11
1916	17,220	426	69	516	11	44	142	9
1917	37,747	843	232	6	(e)	164	45	4
1918	57,634	1,377	2,631	7	(e)	71	177	29
1919	105,183	2,583	1,457	29	1	114	18	44
1920	129,250	5,045	744	17	54	300	73	28
1921	53,302	2,144	398	10	7	243	44	23
1922	56,155	2,046	245	6	5	352	96	70
1923	59,703	1,338	13	(e)	32	476	118	45
1924	77,970	1,644	115	2	90	378	60	40
1925	74,909	1,923	....	(e)	5	493	5	8
1926	91,859	2,581	....	(e)	43	464	30	31
1927	94,020	2,314	11	(e)	1,516	669	32	50
1928	85,107	2,009	10	(e)	429	12	384	70
1929	79,659	1,780	713	14	1,306	1,067	38	52
1930	69,070	1,540	412	7	4,957	312	1	46
1931	85,664	1,266	393	5	4,820	47	604	3
1932	88,252	1,156	13,044	179	713	14	861	3
1933	86,155	1,105	20,519	280	479	5	665	1
1934	64,594	781	19,676	195	1,681	17	673	(e)
1935	85,965	1,127	20,504	148	2,337	49	826	1
1936	66,836	972	20,325	246	8,307	121	905	1
1937	86,146	1,662	14,535	183	6,995	119	670	1
1938	81,162	1,605	32,318	472	4,951	55	549	(e)
1939	89,029	1,165	36,917	462	14,725	282	1,175	1
1940	91,667	1,301	36,861	490	11,764	214	740	(e)
1941	118,595	2,185	34,412	460	18,209	373	282	2
1942	84,974	1,681	32,988	428	10,287	213	114	1
1943	77,616	1,581	3,334	47	6,309	139	139	1
1944	106,859	2,344	18,082	262	760	22	96	27
1945	101,896	2,505	18,969	369	17,656	581	132	2
1946	116,942	4,667	25,254	502	13,010	446	488	2
1947	129,699	7,628	18,113	383	12,735	484	1,445	27
1948	139,996	11,326	40,207	1,000	18,329	681	1,688	10
1949	131,203	10,516	40,843	1,047	13,506	431	1,452	11
1950	115,814	8,335	29,033	864	9,931	384	1,780	5
1951	159,740	11,774	9,795	312	11,004	506	2,295	9
1952	161,581	13,669	2,828	93	13,301	733	2,853	23
1953	176,241	15,090	3,059	126	12,657	750	4,556	23
1954	147,849	11,704	3,343	141	15,773	1,300	3,300	29
1955	120,342	7,219	3,312	142	8,878	512	3,845	68
1956	129,421	7,766	5,017	206	2,239	171	3,393	177
1957	127,491	7,474	3,489	156	7,606	736	4,598	243
1958	111,827	6,907	3,938	169	13,777	832	3,725	308
1959	104,559	6,337	3,508	166	8,442	368	3,609	396
1960	87,851	5,100	3,764	183	9,460	436	2,437	325
1961	135,407	7,840	5,971	247	7,697	437	4,636	318
1962	97,983	5,891	14,877	532	10,165	632	2,818	55
1963	74,574	4,645	4,857	228	17,747	810	4,982	160
1964	69,090	4,396	2,723	126	9,768	353	4,016	331
1965	92,402	5,926	3,272	159	12,731	841	5,165	427
1966	54,157	3,378	20,896	732	21,025	1,393	4,838	283
1967	38,365	2,507	3,778	201	17,202	692	5,704	381
1968	46,207	2,944	4,433	232	12,934	622	4,068	1,229
1969	38,691	2,433	4,549	254	21,597	1,149	6,552	972
1970	34,362	2,257	4,256	243	19,574	831	6,054	760
1971	29,399	1,958	5,239	325	9,242	510	7,208	1,159
1972	20,814	1,345	4,603	297	8,464	371	5,245	1,865
1973	10,801	859	4,665	311	4,833	334	6,135	1,661

(a) From 1915, year ended 30 June. (b) Includes tomatoes for 1932-33 and earlier years. (c) Short ton = 2,000 lb.
 (d) Not available. (e) Less than \$500. * Revised.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (a)	Skins and hides		Timber (b)		Rock lobster tails (c)		Pearl-shell		Iron and steel (d)
	Value	Quantity	Value	Quantity	Value	Quantity	Value	Value	
	\$'000	'000 sup. ft	\$'000	'000 lb	\$'000	cwt	\$'000	\$'000	
1850	1	126	2						
1860	(e)	658	10						
1870	(e)	2,566	35			1,480	19		
1880	8	7,950	133			14,380	79		
1890	49	14,066	164			24,745	173		
1900	150	68,705	916			14,747	173	7	
1910	482	144,858	1,945			29,281	492	5	
1915	300	119,622	1,617			22,806	323	45	
1916	504	65,188	884			25,045	317	14	
1917	445	46,688	622			24,000	394	21	
1918	407	41,230	548			17,267	288	53	
1919	544	49,629	665			13,253	236	62	
1920	1,246	60,784	931			33,505	671	16	
1921	759	117,795	2,274			23,056	470	26	
1922	730	99,707	2,082			30,440	508	16	
1923	1,092	94,935	1,995			25,477	429	18	
1924	1,040	133,648	2,735			28,479	487	6	
1925	955	142,132	2,956			23,264	469	13	
1926	883	144,017	3,046			25,762	465	9	
1927	752	157,355	3,316			24,502	425	10	
1928	1,106	124,617	2,531			19,066	332	7	
1929	1,101	91,623	1,921			21,515	345	3	
1930	738	78,957	1,615			19,378	331	3	
1931	539	49,534	1,015			20,313	334	2	
1932	395	36,752	722			12,237	194	1	
1933	480	26,826	523			20,653	294	1	
1934	771	48,730	972			16,854	196	7	
1935	640	63,913	1,270			19,435	189	3	
1936	1,061	67,178	1,356			19,363	214	3	
1937	1,143	68,087	1,397			18,261	247	7	
1938	985	90,549	1,860			24,781	336	12	
1939	736	68,451	1,436			22,621	212	15	
1940	745	60,595	1,251			16,859	153	31	
1941	580	73,094	1,546			13,704	153	35	
1942	772	62,697	1,369			11,616	142	19	
1943	348	42,272	1,189			120	1	5	
1944	680	43,744	1,216			37	1	23	
1945	537	34,218	1,131					100	
1946	1,274	40,476	1,429			260	8	9	
1947	2,131	41,505	1,719			2,491	120	99	
1948	2,048	43,349	2,230			6,733	340	89	
1949	2,134	38,379	1,986	(f)	(f)	8,169	367	59	
1950	2,329	34,295	1,949	1,143	463	6,997	248	95	
1951	5,294	28,110	1,783	3,165	1,517	6,797	274	83	
1952	3,194	28,659	2,075	2,891	1,861	8,205	406	58	
1953	3,942	47,585	4,147	2,930	2,085	10,538	612	357	
1954	3,295	46,318	4,480	3,222	2,342	12,271	708	279	
1955	2,921	41,748	3,847	3,377	2,490	13,785	820	602	
1956	3,274	54,591	5,598	3,529	3,022	15,954	999	530	
1957	4,650	56,147	6,215	3,566	3,514	21,671	1,391	1,174	
1958	3,898	66,872	7,496	4,708	3,965	22,580	1,381	2,470	
1959	3,489	77,561	8,415	6,117	5,281	15,521	772	4,218	
1960	4,767	73,601	7,760	6,604	6,499	12,535	707	11,198	
1961	3,828	66,412	7,175	5,106	5,881	11,283	502	12,781	
1962	4,580	68,059	7,528	7,952	9,778	8,924	320	13,826	
1963	4,339	65,811	7,241	7,694	8,910	7,647	289	15,107	
1964	4,966	63,331	6,813	7,532	9,211	3,304	112	15,029	
1965	4,177	56,521	6,279	5,891	10,592	3,186	133	17,933	
1966	5,447	29,185	3,687	7,040	13,821	3,045	123	14,458	
1967	5,377	58,960	7,475	8,032	13,873	4,284	189	15,658	
1968	4,699	35,850	4,947	8,640	17,989	4,178	147	11,442	
1969	6,013	37,271	5,068	6,698	17,133	4,180	125	27,002	
1970	7,968	40,816	5,666	6,561	15,695	5,013	173	34,306	
1971	5,395	33,660	4,808	6,955	19,413	3,862	132	34,571	
1972	5,356	42,877	6,440	7,550	24,626	3,981	123	36,415	
1973	13,945	47,695	7,087	6,990	20,919	4,290	131	36,529	

(a) From 1915, year ended 30 June. (b) Excludes plywood and veneers and small quantities of timber for which the superficial footage is not recorded. For the years 1910 to 1921, figures are approximate. (c) Figures for the years 1949–50 to 1951–52 represent overseas exports only and exclude small consignments to other Australian States. Those for 1952–53 to 1959–60 include small consignments of cooked whole rock lobsters to other Australian States. (d) Principally pig-iron, cast iron and basic shapes and sections of iron and steel. (e) Less than \$500. (f) Precise information not available, but it is known that the value of exports was about \$500,000.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Gold mint bullion (b)		Lead and zinc ores (c)	Tin ore and concentrates	Asbestos (crude and fibre)		Manganese ore and concentrates		Iron ore and concentrates		Ilmenite concentrates (including leucogene)	
	Quantity	Value (d)	Value	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	'000 fine oz	\$'000	\$'000	\$'000	short tons (e)	\$'000	'000 tons	\$'000	'000 tons	\$'000	'000 tons	\$'000
1850	....	....	5	....	....	....	....	....	....	....	....	....
1860	....	....	2	....	....	....	....	....	....	....	....	....
1870	....	....	29	....	....	....	....	....	....	....	....	....
1880	....	....	31	....	....	....	....	....	....	....	....	....
1890	23	173	4	11	....	....	....	....	....	....	....	....
1900	1,000	7,589	5	76	....	....	....	....	....	....	....	....
1910	334	2,835	4	93	....	....	....	....	....	....	....	....
1915	100	827	95	51	....	....	....	....	....	....	....	....
1916	183	1,547	22	92	....	....	....	....	....	....	....	....
1917	....	....	7	113	....	....	....	....	....	....	....	....
1918	....	....	9	110	1	5	....	....	....	....	....	....
1919	....	....	8	112	3	5	....	....	....	....	....	....
1920	41	452	102	129	....	....	....	....	....	....	....	....
1921	(f)	1	67	41	145	13	5555	5555	....	....	....	....
1922	....	....	....	10	98	8	....	....	....	....	....	....
1923	....	....	47	18	....	....	5555	5555	....	....	....	....
1924	91	767	108	38	....	....	....	....	....	....	....	....
1925	36	305	186	29	....	....	5555	5555	....	....	....	....
1926	50	386	186	23	....	....	....	....	....	....	....	....
1927	91	711	109	28	....	....	5555	5555	1	....	....	....
1928	14	121	8	24	....	....	....	....	....	....	....	....
1929	10	81	11	30	....	....	....	....	....	....	....	....
1930	(f)	1	19	29	....	....	....	....	....	....	....	....
1931	....	....	2	10	....	....	....	....	....	....	....	....
1932	515	7,336	1	6	....	....	....	....	....	....	....	....
1933	625	9,376	55	7	....	....	....	....	....	....	....	....
1934	653	10,624	55	11	....	....	....	....	....	....	....	....
1935	589	10,258	55	17	....	....	....	....	....	....	....	....
1936	771	13,385	55	18	....	....	....	....	....	....	....	....
1937	909	15,819	55	16	....	....	....	....	....	....	....	....
1938	1,075	18,598	1	20	310	37	....	....	....	....	....	....
1939	1,169	21,240	1	11	300	26	....	....	....	....	....	....
1940	1,168	24,056	2	14	207	17	....	....	....	....	....	....
1941	1,202	25,096	2	12	163	15	....	....	....	....	....	....
1942	975	20,590	2	6	82	7	....	....	....	....	....	....
1943	756	15,744	1	5	98	8	....	....	....	....	....	....
1944	349	7,250	1	6	101	8	....	....	....	....	....	....
1945	....	....	1	5	425	36	....	....	....	....	....	....
1946	....	....	(f)	8	1,192	104	....	....	....	....	....	....
1947	....	....	5	12	702	65	....	....	....	....	....	....
1948	356	7,656	146	17	1,324	148	....	....	....	....	....	....
1949	....	....	235	31	1,299	179	2	22	....	....	....	....
1950	(f)	2	272	49	985	204	10	126	....	....	....	....
1951	....	....	263	62	1,728	378	11	154	....	....	....	....
1952	395	13,143	1,369	107	2,888	709	8	115	52	102	....	....
1953	759	24,798	1,681	153	3,313	990	14	256	544	1,079	....	....
1954	418	13,230	270	97	3,527	986	27	829	583	1,157	....	....
1955	618	19,338	108	146	4,180	788	34	804	580	1,149	....	....
1956	410	12,842	888	322	8,305	1,440	55	1,271	472	936	....	....
1957	770	24,119	960	293	11,825	2,140	58	1,551	329	649	....	....
1958	208	6,511	410	166	12,944	2,920	75	2,501	439	870	88	1,011
1959	132	4,118	238	304	11,836	2,166	56	1,628	589	1,169	65	648
1960	600	18,738	229	415	16,983	3,111	79	2,224	796	1,601	89	713
1961	2,532	79,271	83	325	11,879	2,364	47	1,267	1,019	2,101	130	1,198
1962	453	12,195	45	563	14,165	2,753	108	2,945	1,052	2,209	156	1,441
1963	417	13,048	33	532	13,900	2,799	52	1,390	1,471	2,898	180	1,717
1964	385	12,045	18	1,080	8,894	1,767	27	695	1,359	2,743	259	2,571
1965	513	16,127	662	1,229	12,270	2,210	76	1,747	1,537	3,040	325	3,194
1966	833	26,147	124	1,521	8,889	1,702	104	2,404	2,615	6,967	423	4,181
1967	480	15,107	177	2,214	6,597	1,229	190	4,161	8,395	50,890	436	4,440
1968	373	11,816	58	2,330	(g)	(f)	161	3,408	14,333	104,506	455	4,645
1969	361	12,701	161	1,843	72	8	176	3,624	19,584	151,797	548	5,751
1970	387	13,874	41	1,386	62	4	158	3,086	31,044	233,580	564	6,068
1971	96	3,041	....	1,511	50	10	156	2,755	45,542	341,702	554	6,631
1972	108	4,125	....	2,043	44	3	127	2,005	47,890	347,500	576	8,337
1973	281	15,681	6	2,277	....	....	51	934	64,993	420,255	(h) 586	(h) 7,696

(a) From 1915, year ended 30 June. (b) Gold sold abroad before consignment is not recorded as an export until actually shipped. (c) Includes silver-lead and silver-lead-zinc ores and concentrates. (d) Includes additional premiums on sales of industrial gold. (e) Short ton = 2,000 lb. (f) Less than 500. (g) 700 lb. (h) Excludes overseas exports of beneficiated ilmenite.

EXTERNAL TRADE
(S'000)

Year (a)	Imports			Exports (b)			Excess of—		Ships' stores
	Overseas	Interstate	Total	Overseas	Interstate	Total	Imports	Exports	
1850	(c)	125	(c)	(c)	44	80	.....	(c)
1860	318	20	160	16	175	163	.....	3
1870	260	167	348	46	394	33	.....	8
1880	349	358	736	252	988	.....	280	11
1890	1,025	724	961	369	1,330	419	.....	14
1900	6,574	5,350	11,246	2,250	13,496	.....	1,572	208
1910	8,750	7,067	11,679	4,627	16,306	.....	489	294
1915	7,972	8,630	16,603	6,242	4,177	10,419	6,184	286
1916	8,338	9,628	17,966	8,769	6,711	15,480	2,486	601
1917	8,773	9,997	18,770	9,291	19,488	28,779	.....	587
1918	5,011	10,288	15,298	8,521	2,783	11,303	3,995	311
1919	6,281	9,767	16,048	18,886	2,323	21,209	.....	637
1920	9,918	14,819	24,737	28,918	2,392	31,311	.....	827
1921	14,439	15,239	29,678	20,790	2,724	23,514	6,165	1,004
1922	8,616	15,459	24,076	21,594	4,522	26,116	.....	1,141
1923	13,001	14,555	27,555	19,359	2,252	21,611	5,944	599
1924	13,325	15,363	28,688	24,825	2,928	27,753	935	493
1925	16,053	16,095	32,148	25,719	2,623	28,342	3,806	987
1926	15,792	17,133	32,925	25,223	2,876	28,100	4,826	1,064
1927	18,894	17,858	36,752	26,135	2,810	28,946	7,806	1,358
1928	18,023	18,553	36,575	32,505	2,674	35,179	1,396	1,302
1929	18,906	21,201	40,108	30,603	2,411	33,014	7,094	1,358
1930	17,758	19,805	37,563	32,009	2,213	34,223	3,341	1,316
1931	9,165	13,639	22,804	33,306	1,550	34,856	.....	1,095
1932	6,926	15,854	22,780	29,633	1,826	31,459	.....	1,133
1933	9,542	16,740	26,282	28,037	1,916	29,953	.....	1,122
1934	8,889	18,554	27,443	31,132	2,427	33,559	.....	1,024
1935	10,203	20,290	30,493	30,002	2,650	32,652	.....	1,106
1936	12,688	22,073	34,761	33,023	3,665	36,689	.....	1,095
1937	14,144	24,742	38,886	34,592	6,361	40,953	.....	1,029
1938	15,986	25,879	41,865	38,944	6,057	45,001	.....	1,200
1939	12,275	25,329	37,604	34,149	10,815	44,964	.....	1,049
1940	12,568	27,450	40,017	19,256	28,518	47,774	.....	1,380
1941	9,710	27,519	37,229	16,900	30,808	47,708	.....	1,971
1942	10,391	26,110	36,501	23,157	25,241	48,398	.....	2,305
1943	7,383	24,803	32,186	10,625	20,117	30,741	1,445	1,983
1944	7,770	26,628	34,399	22,845	13,472	36,317	.....	2,747
1945	9,215	26,863	36,079	24,765	11,533	36,298	.....	2,508
1946	11,018	32,238	43,256	38,917	11,662	50,579	.....	2,511
1947	18,929	42,253	61,182	46,015	11,459	57,474	3,708	1,966
1948	34,311	51,329	85,640	97,389	11,599	108,989	.....	2,474
1949	44,075	61,182	105,258	96,982	9,495	106,477	.....	4,710
1950	68,844	70,044	138,887	106,590	12,421	119,011	19,876	4,720
1951	80,517	95,828	176,345	197,686	18,780	216,466	.....	7,249
1952	120,474	124,209	244,683	151,562	35,404	186,966	57,717	8,419
1953	59,748	137,213	196,961	166,286	49,659	215,945	.....	10,321
1954	85,051	165,374	250,425	136,849	39,190	176,039	74,386	7,266
1955	101,295	182,110	283,405	137,013	47,310	184,323	99,082	7,865
1956	92,963	177,952	270,915	152,286	68,466	220,752	50,164	10,592
1957	80,423	188,680	269,103	216,599	81,545	298,144	.....	12,902
1958	91,775	195,103	286,879	179,516	79,836	259,352	27,527	11,602
1959	89,972	202,430	292,402	174,585	68,919	243,504	48,898	9,482
1960	92,363	246,696	339,059	231,766	77,278	309,043	30,016	8,954
1961	110,531	245,474	356,005	309,332	89,922	399,254	.....	10,285
1962	100,178	245,208	345,386	287,619	84,626	372,245	.....	9,379
1963	112,640	313,712	426,351	246,823	91,636	338,459	87,892	7,904
1964	121,677	323,176	444,854	286,132	101,811	387,943	56,911	9,733
1965	153,540	343,899	497,439	243,078	119,954	363,033	134,407	9,009
1966	175,690	403,054	578,744	314,404	119,619	434,023	144,721	10,058
1967	159,390	474,852	634,242	421,325	116,030	537,355	96,887	10,936
1968	206,980	527,052	734,031	475,260	124,505	599,765	134,266	14,824
1969	203,533	562,312	765,846	546,366	149,892	696,258	69,588	14,327
1970	242,299	640,189	882,487	675,027	149,861	824,888	57,600	15,092
1971	278,344	726,778	1,005,122	862,421	151,093	1,013,514	.....	20,561
1972	283,263	787,788	1,071,051	946,504	138,478	1,084,982	.....	22,477
1973	227,269	786,177	1,013,447	1,154,359	159,327	1,313,686	300,239	17,542

(a) From 1915, year ended 30 June.

(b) Excludes ships' stores.

(c) Not available.

LAND TENURE; LIVESTOCK; WOOL PRODUCTION

Year	Land alienated and land in process of alienation (a)	Land held under lease or licence (a) (b)	Livestock (c)				Wool production (d)	
			Horses	Cattle	Sheep	Pigs	Quantity	Gross value (e)
	'000 hectares	'000 hectares	'000	'000	'000	'000	tonnes	\$'000
1829	212		(f)	(f)	1	(f)	(g)	
1830	256				31		(g)	
1840	647				128		(g)	
1850	538	(f)	1	13	609	2	(g)	
1860	614	2,251	10	32	260	3	(g)	
1870	593	4,953	22	45	1,252	11	298	(g)
1880	860	18,179	35	64	2,525	13	811	
1890	2,159	42,388	44	131	2,434	24	1,970	
1900	2,679	35,360	68	339	5,159	29	3,161	
1910	7,013	67,667	134	825		62	4,323	
1915	8,938	76,787	163	821	4,804	58	13,478	2,607
1916	8,786	79,605	170	864	5,530	91	15,011	3,926
1917	8,726	77,877	178	927	6,384	112	18,296	4,835
1918	8,728	84,195	180	944	7,184	86	20,745	6,155
1919	8,840	99,313	175	881	6,698	58	18,867	5,369
1920	9,317	104,252	179	850	6,533	61	18,947	4,552
1921	9,806	104,614	180	893	6,506	63	19,542	4,482
1922	10,423	108,303	181	940	6,664	68	18,535	6,294
1923	10,953	106,088	182	954	6,596	61	20,541	8,665
1924	11,470	84,959	175	892	6,397	66	19,697	9,151
1925	11,696	94,290	171	836	6,862	74	21,903	6,800
1926	12,253	93,306	166	827	7,459	70	25,007	7,148
1927	12,845	94,762	165	847	8,447	60	28,441	10,170
1928	13,485	96,085	161	838	8,943	49	26,701	8,027
1929	14,326	98,633	160	837	9,557	65	30,459	5,952
1930	14,585	99,307	157	813	9,883	101	32,451	4,829
1931	14,653	87,667	156	827	10,098	121	32,484	5,007
1932	14,516	83,432	157	857	10,417	118	34,086	5,198
1933	14,386	80,260	160	886	10,322	91	35,573	9,404
1934	14,201	81,176	162	912	11,197	98	40,820	6,422
1935	13,807	82,396	160	883	11,083	98	38,876	8,886
1936	13,353	82,541	155	793	9,008	78	28,820	7,306
1937	13,356	82,985	151	740	8,732	65	29,365	5,832
1938	13,358	83,363	144	768	9,178	83	32,874	5,450
1939	13,261	83,247	139	799	9,574	150	34,201	7,581
1940	13,127	84,733	130	789	9,516	218	32,362	7,889
1941	12,995	84,968	124	840	9,773	163	35,211	8,328
1942	12,895	85,607	113	831	10,424	152	43,417	11,935
1943	12,812	85,810	107	871	11,013	164	46,611	12,741
1944	12,797	86,076	97	853	10,050	164	38,166	10,512
1945	12,836	85,928	88	834	9,766	138	37,225	10,424
1946	12,861	85,860	81	812	9,787	102	36,525	16,094
1947	13,061	87,910	75	816	10,444	93	40,609	29,277
1948	13,016	90,169	69	864	10,873	81	42,533	37,720
1949	13,178	91,256	59	865	10,923	79	42,071	47,237
1950	13,515	82,101	55	841	11,362	90	46,680	118,068
1951	13,902	82,918	53	852	12,188	86	52,681	64,027
1952	14,296	83,587	50	846	12,475	76	54,760	75,121
1953	14,911	83,218	49	830	13,087	101	58,497	82,567
1954	15,213	84,432	47	861	13,411	107	56,324	67,985
1955	15,385	86,450	45	897	14,128	99	67,932	69,642
1956	15,507	87,332	45	957	14,887	140	67,301	90,283
1957	15,746	89,111	44	997	15,724	151	68,504	75,228
1958	15,925	88,388	41	1,000	16,215	115	71,376	59,407
1959	16,180	92,311	41	1,030	16,412	131	72,979	75,302
1960	16,343	92,640	40	1,100	17,151	176	82,652	73,863
1961	16,637	94,479	40	1,218	18,314	174	83,159	79,283
1962	17,079	99,722	39	1,298	18,727	131	80,366	80,071
1963	17,484	99,364	39	1,299	20,165	128	95,053	116,331
1964	17,848	99,771	37	1,258	22,392	137	91,170	93,275
1965	18,287	99,444	35	1,271	24,427	144	108,116	115,183
1966	18,737	99,764	(g)	1,357	27,370	161	119,681	121,509
1967	19,192	100,581	(g)	1,427	30,161	183	131,379	116,653
1968	19,504	100,976	(g)	1,546	32,901	220	164,307	158,264
1969	19,620	100,716	29	1,681	33,634	250	144,527	120,819
1970	19,761	102,957	(g)	1,781	34,709	278	151,808	92,009
1971	19,545	103,389	(g)	1,975	34,405	427	*170,219	135,137
1972	19,531	103,218	(g)	2,182	30,919	476	140,649	225,041

(a) From 1907 to 1946, at 30 June; for earlier years and from 1947, at 31 December. (b) Comprises allocations by Lands Department and certain leases and licences issued by Mines and Forests Departments. Apparent decrease in 1950 due mainly to revisions in records of Lands Department. (c) At 31 December for 1941 and earlier years; from 1942, the figures shown relate to 31 March in the following year. (d) Comprises shorn, dead and fellmongered wool. Excludes wool exported on skins. For 1947 and earlier, year ended 31 December; figures shown for 1948 to 1964 are for the year ended 31 March in the following year. From 1965 figures relate to the year ended 30 June in the following year. (e) Figures for 1949 and 1951 to 1955 exclude distributions of profits under the 1939-1945 War-time Wool Disposals Plan aggregating \$13,869,934. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (f) Less than 500. (g) Not available. * Revised.

AGRICULTURE

Year (a)	Total area used for crops (b)	Area and production of principal grain crops							
		Wheat				Oats		Barley	
		Area	Production			Area	Production	Area	Production
			Yield per hectare	Total	Gross value				
	'000 hectares	'000 hectares	tonnes 1-11 (c)	'000 tonnes 1 (c)	\$'000 (c)	'000 hectares (c)	'000 tonnes (c) (d)	'000 hectares (c)	'000 tonnes (c)
1840	1	1	1-11	1					
1850	3	2	1-00	6				1	1
1860	10	6	0-79	9				2	2
1870	22	11	0-62	7				2	2
1880	26	14	0-92	13				2	2
1890	28	30	0-70	21	310			1	1
1900	81		0-68	161	2,162			1	1
1910	346	236				25	14		
1915	886	702	0-71	496	6,535	42	28	4	3
1916	811	634	0-69	438	6,106	49	31	4	3
1917	680	506	0-50	253	4,419	39	16	2	1
1918	650	464	0-52	241	4,423	57	27	3	2
1919	659	422	0-72	305	10,662	78	45	4	3
1920	730	516	0-65	333	11,023	78	37	4	3
1921	770	541	0-70	378	7,532	66	37	3	2
1922	921	628	0-60	377	6,986	87	41	4	2
1923	940	671	0-77	515	8,987	98	52	4	2
1924	1,097	756	0-86	650	14,532	129	77	5	4
1925	1,187	855	0-65	557	12,837	113	53	5	4
1926	1,346	1,040	0-81	846	17,217	95	49	6	3
1927	1,505	1,214	0-82	990	19,842	95	53	5	3
1928	1,724	1,353	0-68	920	16,473	132	63	6	4
1929	1,848	1,444	0-74	1,064	17,721	156	74	10	6
1930	1,939	1,601	0-91	1,456	12,201	111	60	7	4
1931	1,604	1,278	0-88	1,130	14,430	108	64	6	4
1932	1,725	1,371	0-83	1,137	13,554	116	65	6	3
1933	1,707	1,288	0-79	1,015	12,004	139	72	10	7
1934	1,554	1,119	0-66	734	10,123	166	77	11	5
1935	1,508	1,028	0-62	635	9,747	181	83	13	9
1936	1,559	1,042	0-56	586	11,902	187	63	16	10
1937	1,687	1,225	0-81	986	14,830	156	79	18	13
1938	1,895	1,381	0-73	1,003	8,984	172	85	30	21
1939	1,735	1,202	0-93	1,112	15,526	183	96	34	22
1940	1,614	1,062	0-54	573	8,648	174	59	27	16
1941	1,545	1,073	0-95	1,021	15,615	165	97	28	22
1942	1,127	709	0-79	561	10,080	138	66	20	12
1943	1,110	634	0-71	450	9,531	145	72	25	16
1944	1,115	614	0-71	434	8,319	163	70	31	20
1945	1,163	743	0-77	570	15,871	160	74	27	15
1946	1,429	982	0-66	648	22,048	172	66	27	12
1947	1,593	1,117	0-84	939	50,265	200	98	25	17
1948	1,660	1,161	0-85	987	42,122	215	127	26	22
1949	1,737	1,171	0-89	1,048	51,339	237	132	28	22
1950	1,834	1,289	1-05	1,358	65,328	237	144	24	21
1951	1,824	1,253	0-87	1,089	58,984	266	140	23	16
1952	1,877	1,214	0-80	965	55,194	337	189	43	40
1953	1,812	1,168	0-93	1,030	53,423	297	174	85	62
1954	2,041	1,206	0-77	933	43,655	354	174	105	64
1955	2,118	1,170	1-24	1,449	68,840	442	300	136	106
1956	2,080	1,119	0-78	874	44,055	425	189	139	85
1957	2,230	1,197	0-75	901	45,912	467	250	124	81
1958	2,434	1,332	1-18	1,569	77,639	538	410	130	123
1959	2,583	1,505	1-06	1,597	82,361	502	356	170	161
1960	2,734	1,627	1-07	1,739	92,290	538	396	219	193
1961	2,823	1,773	1-01	1,788	100,023	498	366	199	165
1962	2,965	1,944	1-01	1,973	107,023	476	367	158	137
1963	2,714	1,878	0-76	1,424	74,389	455	324	121	92
1964	2,950	2,085	0-82	1,717	88,557	466	254	123	84
1965	3,419	2,489	1-12	2,780	153,050	502	422	167	147
1966	3,463	2,569	1-09	2,809	153,157	487	401	151	152
1967	3,595	2,690	1-08	2,911	170,102	469	359	168	159
1968	3,840	2,952	1-04	3,060	151,306	442	416	224	208
1969	3,916	2,747	0-66	1,815	*90,961	461	281	364	273
1970	3,831	2,361	1-25	2,957	*153,227	520	520	632	769
1971	3,751	2,042	1-06	2,165	*115,934	454	414	911	1,000
1972	3,855	2,437	0-82	2,003	109,399	297	212	744	640

(a) Figures shown for 1942 and earlier are for the year ended last day of February in the following year; those shown for 1943 and later are for the season ended 31 March in the following year. (b) Excludes pasture hay and from 1967 also excludes lucerne. (c) Not available. (d) Less than 500. * Revised.

PRIMARY PRODUCTION—MISCELLANEOUS

Year	Hay (all kinds) (a)		Gold production (b) (c)		Coal production (c)		Average values f.o.b.	
	Area	Production	Quantity	Value (d)	Quantity	Value	Wool(greasy) per kg (e)	Wheat per tonne (f)
	'000 hectares	'000 tonnes	'000 fine oz	\$'000	'000 tons	\$'000	cents	\$
1860	2	8	....	....	....	....	....	19·83
1870	7	21	....	....	....	....	....	....
1880	8	20	....	....	....	....	(g)	18·37
1890	9	25	20	171	....	....	....	....
1900	42	106	1,414	12,015	118	110	....	5·51
1910	71	182	1,471	12,494	262	227	16·20	14·85
1915	117	401	1,210	10,280	287	276	14·99	(h) 25·64
1916	98	241	1,061	9,017	302	296	19·22	17·84
1917	108	271	970	8,243	327	384	25·66	17·15
1918	101	254	877	7,446	337	409	22·13	18·45
1919	132	385	734	7,498	402	521	28·68	19·75
1920	108	268	618	6,951	462	701	28·26	26·33
1921	136	375	554	5,907	469	814	24·07	26·94
1922	175	464	538	5,052	438	763	22·95	20·21
1923	134	374	505	4,464	421	738	33·60	18·53
1924	161	456	485	4,512	422	727	41·78	17·45
1925	158	361	441	3,749	437	726	45·97	22·35
1926	145	431	437	3,715	475	789	30·78	23·04
1927	144	424	408	3,469	502	816	28·31	20·29
1928	168	429	393	3,342	528	840	35·52	20·05
1929	170	435	377	3,204	545	853	29·87	18·60
1930	161	500	418	3,729	501	770	19·37	16·69
1931	154	460	511	5,996	432	672	14·77	8·42
1932	169	493	606	8,807	416	541	15·50	11·48
1933	194	520	637	9,773	458	580	15·74	11·18
1934	167	470	651	11,118	500	557	28·75	10·79
1935	200	513	649	11,404	537	636	17·73	11·79
1936	193	420	846	14,747	565	663	24·98	14·62
1937	175	457	1,001	17,488	554	681	29·70	20·29
1938	165	445	1,168	20,726	605	750	24·25	15·08
1939	160	484	1,214	23,686	558	726	19·58	8·95
1940	169	381	1,191	25,393	539	729	25·68	11·19
1941	132	421	1,109	23,703	557	779	28·70	14·49
1942	102	282	848	17,731	581	923	28·64	15·12
1943	114	319	546	11,421	532	979	32·19	15·09
1944	133	344	466	9,800	558	1,166	34·81	17·71
1945	114	292	469	10,021	543	1,146	34·24	23·30
1946	112	284	617	13,280	642	1,460	34·92	31·81
1947	93	272	704	15,151	731	1,680	45·64	48·42
1948	92	281	665	14,314	733	1,760	76·41	64·33
1949	87	276	648	15,926	751	1,944	94·20	56·11
1950	72	231	610	18,933	814	2,575	105·91	57·03
1951	70	215	628	19,451	848	3,434	263·50	62·25
1952	92	295	730	23,696	830	4,915	138·10	62·64
1953	89	299	824	26,598	886	6,146	148·04	63·57
1954	117	310	851	26,627	1,018	7,178	156·20	60·90
1955	109	390	842	26,749	904	6,179	135·39	52·22
1956	98	293	812	26,405	830	5,448	112·66	46·57
1957	137	392	897	29,102	839	5,105	144·67	48·12
1958	135	462	867	28,357	871	4,561	130·80	56·35
1959	129	440	867	28,388	911	4,713	91·87	51·76
1960	115	387	856	28,140	922	4,878	115·37	49·48
1961	119	402	872	28,584	766	3,361	99·10	49·91
1962	138	460	859	28,115	919	3,962	109·80	51·90
1963	117	395	800	26,375	902	3,970	111·38	52·30
1964	123	396	713	23,383	987	4,679	134·47	52·01
1965	118	421	659	22,381	994	4,410	120·58	51·66
1966	119	424	629	23,316	1,061	4,562	116·00	51·12
1967	129	428	576	21,690	1,062	4,765	117·46	54·88
1968	138	508	512	19,407	1,087	4,817	105·69	51·31
1969	202	576	481	19,040	1,103	4,853	107·60	51·26
1970	190	673	396	15,811	1,159	5,407	98·11	47·72
1971	177	653	359	14,237	1,171	5,653	75·33	48·88
1972	224	664	349	*14,855	1,169	5,855	74·94	49·52
1973	(i)	(i)	299	16,790	1,135	6,422	150·21	49·67

(a) See footnote (a) on preceding page. (b) Comprises gold refined at the Mint and gold contained in gold-bearing materials exported. (c) From 1969 figures relate to year ended 30 June. (d) Includes amounts, totalling \$17,449,492 for the years 1952 to 1973, distributed by the Gold Producers' Association Ltd, from premiums on sales of Western Australian gold. Also includes net subsidy payments by the Commonwealth Government, under the *Gold Mining Industry Assistance Act 1954-1972*, totalling \$29,409,094 in the years 1955 to 1973. (e) From 1915 figures relate to year ended 30 June. (f) Prior to 1940 averages generally are based on exports of the previous season's wheat; from 1940 they relate to exports during the year ended 30 June. (g) Not available. (h) Exports negligible; average Metropolitan Market price shown. (i) Not available at time of publication.

* Revised.

VALUE OF PRIMARY PRODUCTION
(Excluding Mining)
(\$'000)

Year (a)	Gross value of primary production (excluding mining) (b)							Net value of primary production (excluding mining) (c) (e)
	Agri- culture	Dairying, poultry farming and bee keeping	Pastoral (c)	Hunting	Forestry	Fisheries (d)	Total	
1914	6,194	1,122	4,115					
1915	13,059	1,173	6,060					
1916	11,779	1,383	7,340					
1917	8,513	1,332	8,959					
1918	9,516	1,396	9,088		(g)	(g)	(g)	(g)
1919	18,133	1,687	9,544					
1920	17,466	2,065	9,008					
1921	13,853	2,265	8,032					
1922	12,992	2,350	10,584					
1923	15,076	2,483	13,027			642		
1924	22,367	2,726	13,419			764		
1925	19,510	2,507	11,537		4,126	970	38,651	26,790
1926	24,187	2,503	11,262		3,367	580	41,899	29,222
1927	26,068	2,687	14,687		2,906	516	46,865	33,088
1928	23,884	2,936	13,501		2,463	561	43,344	28,930
1929	24,504	3,443	10,800		2,159	544	41,450	23,733
1930	17,756	3,170	8,845		1,809	485	32,066	13,977
1931	20,985	3,311	8,023		1,312	427	34,058	18,918
1932	20,495	3,338	8,057		1,183	430	33,502	17,709
1933	19,022	3,315	13,369		1,648	406	37,759	22,238
1934	16,336	3,927	9,329	127	2,399	373	32,491	19,174
1935	17,045	3,897	12,439	200	2,653	372	36,606	22,976
1936	18,871	4,170	11,016	421	3,032	465	37,974	24,841
1937	21,071	4,494	9,947	193	2,957	592	39,254	24,479
1938	17,077	4,716	9,326	131	2,899	561	34,711	19,407
1939	23,198	4,855	11,463	139	2,660	562	42,877	27,254
1940	14,760	5,230	11,460	241	3,160	539	38,391	20,765
1941	22,219	5,960	11,958	276	2,950	479	43,843	27,630
1942	18,106	7,664	16,155	190	3,277	255	45,647	30,961
1943	18,505	7,971	18,156	225	3,150	347	48,353	33,073
1944	20,856	8,473	15,385	215	3,152	330	48,411	33,907
1945	26,310	8,709	15,948	281	3,358	438	55,044	39,418
1946	32,635	8,933	21,986	465	3,305	635	67,959	50,237
1947	64,699	9,790	37,036	395	3,649	1,135	116,703	95,440
1948	58,785	11,964	46,254	517	4,024	1,379	122,924	96,436
1949	69,686	12,975	58,687	393	4,501	1,432	147,674	118,334
1950	87,752	14,155	131,921	499	6,741	1,649	242,716	204,544
1951	86,791	18,778	79,955	488	8,517	2,505	197,034	151,452
1952	87,127	21,289	90,639	461	7,155	3,286	209,956	156,303
1953	86,533	22,328	101,567	609	7,678	3,808	222,523	166,211
1954	77,164	21,762	87,435	335	8,116	4,383	199,195	140,799
1955	109,709	22,433	89,293	361	10,474	4,915	237,185	172,142
1956	80,170	23,240	112,885	277	10,305	5,563	232,441	168,050
1957	87,293	23,500	94,118	175	11,046	6,530	222,662	153,299
1958	126,672	22,838	81,639	125	10,903	7,818	249,995	171,083
1959	131,052	24,696	100,255	288	10,919	8,621	275,831	194,365
1960	140,003	25,917	101,051	579	11,082	8,569	287,201	201,580
1961	148,765	26,400	105,310	511	11,104	10,689	302,779	216,761
1962	157,948	27,387	107,280	376	10,877	11,219	315,087	223,576
1963	123,342	28,723	148,701	632	11,462	10,187	323,047	235,973
1964	139,426	30,884	125,837	775	12,093	15,218	324,233	234,564
1965	215,949	32,899	157,249	836	12,731	15,733	335,397	328,298
1966	218,206	33,022	159,857	986	13,300	16,525	441,895	323,275
1967	234,020	35,485	158,754	1,236	14,076	21,954	465,524	330,396
1968	*218,854	38,801	210,780	1,211	13,465	23,717	*506,828	*358,460
1969	*153,805	40,459	176,387	1,098	13,632	19,660	*405,041	*263,629
1970	*256,862	42,330	146,198	834	16,174	25,127	*487,525	*337,158
1971	*216,969	*45,170	*199,443	838	*14,660	*30,817	*507,896	*362,324
1972	203,417	50,137	321,111	2,132	14,607	28,158	619,561	474,276

(a) Figures generally are for the season or financial period ending in the following year. (b) Represents the estimated value of recorded production based on wholesale prices realised at the principal market. (c) In addition, the following amounts were paid as interim distribution of profits under the 1939-1945 War-time Wool Disposals Plan: in 1949, \$3,629,478; in 1951, \$3,629,478; in 1952, \$2,325,324; in 1953, \$368,104; in 1954, \$2,120,460; and in 1955, \$1,797,090. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (d) Includes pearling and whaling. (e) Net value of production is derived by deducting from the gross value all marketing costs and the cost of certain goods (seeds, fertiliser, pickling, sprays, dips, fodder, fuel and oil, etc.) used in the process of production. (f) Separate details not available. (g) Not available.

* Revised.

FACTORIES (a)

Year (b)	Fac- tories	Persons em- ployed (c)	Wages and salaries (d)	Output (e)	Net pro- duction (f)	Production of selected commodities							
						Bricks (g)	Fibrous plaster sheets	Timber from local logs (h)	Bacon and ham	Butter (i)	Flour (plain)	Cheese	Scoured wool
	No.	No.	\$'000	\$'000	\$'000	'000	'000 sq yd	'000 sup. ft	tonnes	tonnes	short tons (j)	tonnes	tonnes
1897	487	9,689	(k)	—	—	36,564	—	85,053	—	123	7,314	—	—
1898	595	9,895	(k)	—	—	26,811	—	103,043	—	120	8,460	—	—
1899	603	10,206	2,496	(k)	(k)	18,565	—	118,052	—	134	10,042	—	—
1900	632	11,166	2,589	—	—	25,234	—	112,693	—	132	12,539	—	—
1910	822	14,894	3,532	10,158	5,472	23,162	—	174,528	(k)	291	36,818	—	—
1915	983	15,882	3,871	14,125	6,468	21,667	—	123,494	—	325	32,396	—	—
1916	953	13,844	3,600	14,693	6,294	18,585	—	100,356	—	490	70,912	—	—
1917	944	13,350	3,486	15,324	6,199	17,488	—	85,218	—	618	102,300	—	—
1918	862	13,849	3,726	16,799	6,318	15,672	—	94,990	1,045	403	119,876	—	—
1919	922	16,358	4,636	20,573	7,645	21,092	—	131,477	1,016	452	141,516	—	—
1920	998	16,942	6,073	26,283	9,708	31,838	—	137,934	850	553	120,125	—	—
1921	1,099	18,151	7,136	25,689	10,479	23,548	(k)	183,663	784	695	82,148	(k)	(k)
1922	1,323	18,743	7,426	25,741	11,580	28,509	—	179,059	814	689	94,316	—	—
1923	1,307	19,805	7,731	27,409	12,257	34,864	—	192,547	985	778	107,990	—	—
1924	1,293	21,671	8,673	31,453	13,917	34,930	—	207,137	1,183	753	122,192	—	—
1926 (l) ..	1,170	20,667	13,175	42,890	19,222	53,336	—	328,935	1,905	849	190,369	—	—
1927	1,216	19,403	8,303	31,343	13,814	45,204	—	229,195	1,141	1,118	133,919	—	—
1928	1,398	20,435	9,003	33,996	15,380	52,992	—	227,631	1,176	1,129	127,246	—	—
1929	1,469	20,913	9,351	34,909	15,937	60,568	—	174,324	1,106	1,643	119,550	—	—
1930	1,466	19,643	8,310	33,783	14,976	47,720	—	159,643	1,180	2,143	120,595	—	—
1931	1,455	14,619	5,774	24,707	10,562	13,630	—	112,484	1,321	3,222	132,090	—	—
1932	1,490	13,392	4,671	22,375	9,212	15,101	—	57,690	1,318	3,787	131,165	—	—
1933	1,499	14,810	5,083	24,655	10,124	25,673	—	59,254	1,567	4,292	127,574	—	—
1934	1,606	16,154	5,505	25,755	10,889	31,717	—	96,428	1,932	4,456	122,000	129	1,324
1935	1,658	17,769	6,222	29,283	12,570	37,552	—	130,497	2,068	5,072	124,130	291	1,633
1936	1,946	20,972	7,408	35,057	15,008	50,498	—	154,989	2,411	4,975	118,340	391	1,533
1937	2,032	22,712	8,315	36,626	15,893	53,270	1,084	176,321	1,972	4,827	122,723	458	1,129
1938	2,066	23,133	8,803	39,288	17,125	57,598	953	176,718	1,976	6,215	125,472	400	1,358
1939	2,129	23,211	9,147	39,097	17,551	53,062	882	161,315	1,911	6,647	137,553	443	1,673
1940	2,129	22,967	9,150	40,615	18,055	43,786	784	152,453	2,106	6,351	140,849	382	2,459
1941	2,056	22,734	9,441	43,650	18,034	45,505	833	146,847	2,325	6,454	149,925	431	3,867
1942	1,938	23,980	10,999	47,904	20,201	34,247	494	146,013	2,773	7,103	135,338	589	2,709
1943	1,799	25,813	12,956	53,475	22,906	8,926	183	138,878	4,172	6,549	126,274	735	3,455
1944	1,807	28,101	14,835	58,417	25,023	6,296	243	121,600	4,391	6,254	159,799	804	4,437
1945	1,911	29,146	15,228	63,481	25,920	10,003	365	116,330	5,051	5,767	161,690	835	4,274
1946	2,280	30,256	15,768	68,046	27,653	24,150	654	117,995	4,646	5,694	166,791	824	3,899
1947	2,615	33,806	18,210	76,540	31,497	37,758	1,097	139,842	4,677	6,052	176,726	1,033	5,417
1948	2,788	35,967	21,471	91,252	36,768	44,986	1,217	148,695	4,018	7,086	195,497	1,035	5,334
1949	2,925	38,354	25,856	106,835	42,948	50,378	1,446	142,285	3,610	7,078	181,466	884	6,467
1950	3,023	40,733	30,586	127,956	52,088	58,943	1,655	153,813	3,599	6,878	159,495	712	7,110
1951	3,111	43,761	39,316	168,862	68,441	67,312	2,068	176,207	3,615	6,906	217,345	760	5,828
1952	3,267	45,097	50,769	213,143	85,491	76,884	2,575	199,447	3,739	6,813	221,846	634	5,884
1953	3,424	45,188	56,687	238,620	98,383	86,043	2,436	223,325	3,752	6,584	224,330	909	6,162
1954	3,523	47,459	63,181	269,174	110,294	101,240	2,349	241,011	3,503	6,241	187,958	1,224	6,914
1955	3,727	49,314	69,476	299,169	121,912	115,412	2,517	251,493	3,369	7,260	165,767	1,100	7,226
1956	3,871	50,108	74,413	350,293	139,466	102,359	2,172	245,138	3,283	7,523	179,362	775	9,483
1957	3,935	48,748	73,833	375,272	146,884	101,209	1,492	228,427	3,103	7,582	169,535	1,201	11,044
1958	3,941	48,462	75,870	392,525	150,624	111,082	1,506	233,173	2,999	6,916	148,148	1,033	11,708
1959	4,125	48,417	77,464	392,405	157,524	101,521	1,349	237,779	3,002	6,265	139,702	1,200	12,791
1960	4,279	49,651	83,285	431,165	172,747	110,359	1,423	225,461	3,228	7,494	150,774	1,466	15,271
1961	4,334	50,666	90,255	481,140	193,262	119,998	1,494	210,316	3,214	7,784	168,237	1,373	13,420
1962	4,418	51,033	92,840	486,988	196,083	119,868	1,446	213,948	3,556	7,603	141,103	1,386	14,459
1963	4,492	53,435	99,880	517,899	216,422	131,176	1,578	205,835	3,899	7,075	135,911	1,462	13,312
1964	4,609	55,705	108,515	555,058	230,511	155,792	1,642	218,911	3,841	7,026	143,296	1,530	12,464
1965	4,734	58,097	119,978	616,422	260,637	146,057	1,597	233,254	4,047	7,887	134,378	1,838	12,040
1966	4,906	60,282	134,171	678,751	288,803	140,611	1,716	233,747	4,357	8,225	113,665	1,230	12,107
1967	5,167	63,757	153,597	765,224	335,788	163,166	1,743	225,735	4,654	6,529	101,109	1,726	12,148
1968	5,404	67,335	175,100	887,372	388,257	207,575	1,954	236,174	5,173	6,009	110,692	1,983	12,662
1969 (m) ..	*2,585	*59,853	183,168	919,555	*361,473	*273,078	*2,104	188,294	4,310	6,322	*106,529	2,022	*14,415
1970 (m) ..	2,705	62,597	208,410	1,028,778	*414,999	*288,949	*2,339	190,845	4,519	5,903	*102,113	1,718	*14,940
1971 (n) ..	(k)	(k)	(k)	(k)	(k)	240,323	1,857	190,265	4,863	5,425	106,275	1,917	10,724
1972 (m) ..	2,727	64,217	255,879	1,240,106	472,013	228,942	1,749	172,474	5,116	5,977	92,243	1,979	16,411
1973	(k)	(k)	(k)	(k)	(k)	289,798	1,753	171,610	5,211	5,349	83,876	1,869	11,750

(a) Prior to 1968-69 a factory was defined for statistical purposes as any establishment engaged in the processes of manufacturing, assembling, treating or repairing and in which 4 or more persons were employed during any period of the year or power other than manual was used. See also footnote (m). (b) For 1924 and earlier, calendar year; from 1927, year ended 30 June. See also note (f). (c) Average over the whole year; includes working proprietors and, up to and including 1925-26, fallers and haulers employed by sawmills. (d) Figures for 1929-30 and later years exclude amounts drawn by working proprietors. (e) Selling value "at the factory". (f) Value added in course of manufacture, representing sum available for payment of wages, rent, depreciation, other sundry expenses and for interest and profit. (g) For years prior to 1964-65, figures include all types of standard size bricks. Prior to 1925-26, they also include firebricks and blocks. From 1964-65 figures represent clay bricks only (all sizes). (h) Includes plywood veneers in terms of superficial feet and hewn timber produced by agencies other than "Factories". (i) For 1917 and earlier years, includes butter made on farms. (j) Short ton = 2,000 lb. (k) Not available. (l) Eighteen months ended 30 June. (m) Direct comparisons of statistics of number of factories, persons employed, salaries and wages, output and net production with those for 1968 and earlier years are not possible (for details see pages 394-5). (n) A census of manufacturing establishments was not conducted in respect of the year ended 30 June 1971.

* Revised.

CONSUMER PRICE INDEX (a)

(Base of each Index: Year 1966-67 = 100)

Year (b)	Group index numbers— Perth (Metropolitan Area)					Combined index (all groups)— Capital Cities						
	Food	Clothing and drapery	Housing	House- hold supplies and equip- ment	Miscel- laneous	Perth	Sydney	Mel- bourne	Bris- bane	Adel- aide	Hobart	Six capital cities (c)
1949	38.4	50.6	36.1	60.4	45.4	44.0	44.4	43.3	43.1	45.0	43.0	43.9
1950	42.5	58.3	38.2	64.6	46.6	48.0	48.1	47.1	46.6	48.4	45.8	47.6
1951	48.8	66.7	42.9	71.0	50.4	53.9	54.6	53.1	52.2	54.6	51.9	53.8
1952	60.8	80.8	50.2	84.2	60.8	65.6	67.4	64.7	63.8	66.8	64.0	65.9
1953	69.7	84.8	57.6	90.9	67.1	72.5	73.4	71.1	69.5	73.1	70.9	72.1
1954	74.0	84.8	62.0	92.7	66.8	74.6	74.5	72.5	70.9	74.7	74.4	73.5
1955	76.1	84.9	68.6	92.8	66.8	76.3	75.0	72.5	71.4	75.6	74.3	74.0
1956	77.4	86.0	71.3	92.7	70.8	78.3	77.5	76.8	73.8	78.1	78.1	77.0
1957	80.9	87.4	71.1	95.0	78.5	81.8	82.8	81.0	77.8	81.2	82.8	81.5
1958	79.7	89.6	72.5	96.0	79.4	82.4	84.0	81.3	79.4	81.8	82.9	82.3
1959	80.3	90.8	75.0	96.3	79.6	83.2	84.6	82.9	82.1	83.6	84.1	83.6
1960	82.5	91.7	76.9	97.3	81.1	84.8	86.5	85.3	84.2	86.2	85.6	85.7
1961	86.7	93.9	81.6	97.5	84.0	87.9	89.6	89.5	87.1	89.8	90.3	89.2
1962	86.1	94.7	84.3	97.6	84.0	88.2	89.9	89.8	88.4	89.5	90.7	89.6
1963	86.4	95.0	86.9	97.3	84.2	88.7	90.4	89.7	88.7	89.1	90.7	89.8
1964	87.4	95.7	89.8	95.7	86.2	89.8	91.4	90.4	89.6	90.2	91.7	90.6
1965	91.0	96.8	92.1	96.7	90.0	92.6	94.5	94.0	93.0	93.9	94.6	94.0
1966	95.2	97.9	95.4	98.3	95.3	96.1	97.7	97.5	97.5	97.0	98.0	97.4
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	102.9	102.1	105.8	100.7	103.2	102.9	103.2	103.7	103.3	102.9	104.6	103.3
1969	104.5	104.5	112.7	102.1	105.6	105.5	106.2	106.2	105.5	105.3	106.1	106.0
1970	108.1	107.8	120.1	103.7	109.8	109.4	110.6	108.7	108.4	108.2	108.5	109.4
1971	112.5	112.3	125.7	107.7	114.8	114.1	116.8	113.1	114.2	112.5	112.6	114.6
1972	116.4	118.9	133.7	112.7	124.5	120.7	*126.3	119.7	121.6	119.2	*119.9	*122.4
1973	124.5	126.1	139.7	117.4	130.4	127.3	133.9	127.2	128.6	126.5	126.7	129.8

(a) The index numbers shown are so designed as to measure periodically the movement in retail prices of the specified groups of items in each capital city individually. They do not provide a measure of differences in absolute price level as between capital cities, nor of comparative costs of the groups of items. (b) Year ended 30 June. (c) Weighted average. * Revised.

NEW BUILDINGS COMPLETED

Year ended 30 June—	Houses		Flats (a)		Other new buildings (b)				Total, all new buildings (b)
	Number	Value (b)	Number	Value (b)	Factories	Office premises	Education	Total, Other new buildings	
1946	860	\$'000 1,452	2	\$'000 4	144			492	\$'000 1,948
1947	1,792	3,516			98			716	4,232
1948	2,771	5,784			176			872	6,656
1949	3,244	7,592			440			1,822	9,414
1950	3,509	8,974	101	194	446			1,536	10,704
1951	5,160	15,032	305	606	410	(c)	(c)	2,258	17,896
1952	6,577	24,466	215	300	1,402			4,086	28,852
1953	7,965	37,988	100	334	1,668			7,514	45,836
1954	7,627	39,768	212	834	1,734			10,968	51,570
1955	8,792	48,422	316	1,176	6,250			18,594	68,192
1956	7,760	45,084	584	2,564	3,756	842	2,162	19,708	67,356
1957	5,030	29,054	365	1,502	2,210	2,002	1,162	16,292	46,848
1958	6,196	36,526	171	712	2,526	3,906	1,110	17,286	54,524
1959	5,846	34,410	212	840	2,792	2,384	4,584	25,274	60,524
1960	5,997	35,454	263	986	2,368	1,544	5,838	23,800	60,240
1961	5,973	38,102	440	1,580	4,736	4,118	7,956	32,368	72,050
1962	6,082	39,470	265	1,342	3,038	2,902	6,014	27,260	68,072
1963	6,593	45,780	642	2,984	4,912	1,588	7,724	37,664	86,428
1964	7,276	51,774	1,295	5,596	5,384	5,996	6,226	35,498	92,868
1965	7,445	57,238	1,841	9,046	6,816	2,820	8,044	40,816	107,100
1966	7,265	58,089	1,624	9,096	9,631	10,576	8,459	62,993	130,178
1967	8,272	78,078	1,742	9,322	9,841	7,093	10,477	74,735	162,135
1968	9,858	97,370	2,392	12,577	15,061	14,608	12,051	85,456	195,403
1969	12,840	133,276	3,491	22,406	15,845	10,885	14,122	99,152	254,833
1970	13,933	151,300	5,596	40,519	16,615	14,294	13,297	111,577	303,397
1971	11,921	149,671	5,013	39,964	18,006	39,736	20,589	175,377	365,012
1972	13,287	166,736	1,595	13,914	21,336	19,360	16,325	150,790	331,440
1973	13,780	165,237	920	7,308	15,594	21,245	24,767	151,468	324,013

(a) Individual living units.

(b) Excludes the value of land.

(c) Not available.

INDUSTRIAL DISPUTES; WAGE RATES; UNEMPLOYMENT BENEFIT

Year	Industrial disputes (a)				State basic wage per week (b)		Minimum wage rate index numbers (c)		Unemployment benefit (d)
	Number of disputes	Workers involved (e)	Working days lost (man-days)		Perth (f)		Adult males (g)		Persons on benefit (h)
			Number	Average per worker involved	Adult males	Adult females	Weekly	Hourly	
		'000	'000	No.	\$	\$			
1913	9	1.0	12.5	12.92					
1914	18	4.4	124.2	28.16					
1915	6	0.6	4.1	6.30					
1916	24	9.1	102.1	11.22					
1917	23	2.9	102.3	34.70					
1918	22	4.8	22.4	4.67					
1919	20	10.0	348.7	34.96	(i)	(i)			
1920	45	12.0	166.6	13.87					
1921	12	12.1	145.1	12.03					
1922	8	0.8	43.5	53.94					
1923	6	4.0	72.3	18.04					
1924	13	3.5	66.7	19.08					
1925	10	4.1	98.9	23.93			(j)	(j)	
1926	9	0.6	9.1	15.11	8.50	4.59			
1927	20	3.4	23.8	7.02	8.50	4.59			
1928	11	2.5	54.9	21.72	8.50	4.59			(j)
1929	4	0.9	2.7	3.05	8.70	4.70			
1930	2	0.5	27.1	57.85	8.60	4.64			
1931	13	3.9	24.0	6.12	7.35	3.97			
1932	8	2.7	11.1	4.16	7.05	3.81			
1933	10	3.9	16.9	4.31	6.92	3.74			
1934	10	3.5	17.8	5.11	7.10	3.83			
1935	11	3.6	72.0	19.98	7.05	3.81			
1936	19	4.7	32.4	6.87	7.38	3.98			
1937	12	1.7	14.4	8.65	7.49	4.04			
1938	7	3.6	43.8	12.01	8.11	4.38			
1939	7	1.3	14.1	11.25	8.22	4.43	35.6	32.0	
1940	4	3.0	7.4	2.44	8.53	4.61	36.8	33.1	
1941	3	0.3	0.8	2.79	9.04	4.88	39.0	35.4	
1942	8	1.8	8.9	4.89	9.78	5.28	47.5	37.6	
1943	10	2.5	38.4	15.11	10.11	5.46	42.8	38.8	
1944	30	11.0	90.0	8.16	9.99	5.39	42.6	38.6	
1945	16	3.8	32.5	8.55	10.01	5.41	42.6	38.7	
1946	11	6.4	69.6	10.94	10.21	5.51	43.6	39.5	422
1947	7	1.8	6.1	3.44	11.08	5.98	48.4	44.1	1,095
1948	9	2.4	7.8	3.33	12.16	6.57	53.9	53.9	409
1949	16	5.7	26.3	4.64	13.59	7.34	59.6	59.7	126
1950	15	2.0	5.7	2.93	16.65	9.41	71.0	71.1	267
1951	10	4.2	5.1	1.22	20.57	13.37	85.5	85.7	60
1952	21	19.2	127.8	6.67	23.85	15.50	97.5	97.7	57
1953	11	3.7	5.0	1.36	24.65	16.02	100.4	100.7	844
1954	15	5.5	21.7	3.94	24.65	16.02	101.7	101.9	427
1955	16	9.8	9.6	0.97	25.24	16.41	106.3	106.6	157
1956	14	11.1	31.9	2.87	26.52	17.23	110.8	111.0	473
1957	14	5.4	3.1	0.57	27.28	17.72	113.9	114.1	1,940
1958	20	11.0	3.0	0.27	27.34	17.78	114.7	114.9	2,330
1959	20	11.2	11.2	1.00	28.15	18.30	120.7	120.8	2,852
1960	43	25.7	27.3	1.06	29.46	22.09	126.8	127.1	2,512
1961	22	9.7	23.2	2.40	29.88	22.41	128.8	129.0	2,154
1962	28	8.4	6.3	0.75	29.88	22.41	129.5	129.7	2,932
1963	28	42.6	32.0	0.75	30.15	22.61	132.8	133.0	2,674
1964	26	6.2	7.1	1.16	31.12	23.34	137.5	137.6	2,677
1965	33	12.6	10.0	0.79	31.96	23.97	143.4	143.5	1,679
1966	25	2.9	6.2	2.17	33.50	25.13	153.6	153.8	785
1967	26	5.1	6.0	1.18	(k)	(k)	159.6	159.9	718
1968	70	18.7	21.8	1.16	35.45	27.08	169.0	168.7	608
1969	104	59.1	101.4	1.72	36.45	27.88	179.5	179.3	524
1970	125	46.5	141.1	3.03	38.45	29.40	198.2	198.0	474
1971	132	35.8	69.4	1.94	39.45	30.90	*219.5	*219.4	872
1972	105	28.3	94.6	3.34	40.45	32.40	(l)*232.8	(l)*232.4	2,808
1973	160	37.6	117.3	3.12	44.00	39.00	(l) 265.6	(l) 265.5	4,960

(a) Excludes disputes involving cessation of work of less than 10 man-days. Details of the number of disputes and workers involved in disputes which commenced in any year and were still in progress during the following year are included in the figures for both years. (b) At 31 December. (c) End of December. Base: weighted average wage rate for Australia, 1954 = 100. (d) Payment commenced 1 July 1945. (e) Includes workers indirectly involved, i.e. those thrown out of work at an establishment where a stoppage occurred but not themselves parties to the dispute. (f) The rates shown for 1964 and later apply uniformly throughout the State. (g) Excludes workers in rural industry. (h) Year ended 30 June; average number of persons on benefit at end of each week. (i) The first State basic wage operated from the beginning of the first pay-period commencing on or after 1 July 1926. (j) Not available. (k) Special loading of 60 cents a week added to award rates for adult males and adult females operative from the beginning of the first pay-period commencing on or after 1 July 1967. Loading increased to \$1.95 operative from the beginning of the first pay-period commencing on or after 25 October 1968 until 22 November 1968 when loading was absorbed in basic wage. (l) Preliminary; subject to revision. * Revised.

WESTERN AUSTRALIA IN RELATION TO AUSTRALIA

Particulars	Unit	Date or period	Western Australia	Australia	Percentage (a)
Area	sq miles	n.a.	975,920	2,967,909	32.9
Proportion of area having rainfall—					
Under 10 in	per cent	n.a.	58.0	39.0	n.a.
10 in. and under 20 in	per cent	n.a.	29.2	31.8	n.a.
20 in. and over	per cent	n.a.	12.8	29.2	n.a.
Population	number	June 1973	1,068,469	13,131,599	8.1
Population increase	number	1972-73	15,287	172,515	8.9
Rate of population increase	per cent	1972-73	1.45	1.33	n.a.
Births registered	number	1972-73	21,116	255,848	8.3
Deaths registered	number	1972-73	7,588	111,337	6.8
Marriages registered	number	1972-73	8,875	111,992	7.9
Divorce—Dissolutions granted	number	1973	1,424	16,095	8.8
Wage and salary earners (c)	'000	Feb. 1974	368.1	4,814.7	7.6
Average weekly earnings per employed male unit	\$	1972-73	99.00	101.50	n.a.
Unemployed on benefit	number	Mar. 1974	2,436	32,600	7.5
Industrial disputes—Working days lost	'000	1973	94.6	2,634.7	4.5
Trade union membership	'000	1972	184.8	2,523.7	7.3
Rural holdings	number	1972-73	21,128	(b) 224,857	8.6
Area under crop	'000 hectares	1972-73	3,855	(b) 14,248	27.1
Area under sown pasture	'000 hectares	1972-73	6,786	(b) 26,173	25.9
Area under irrigation	'000 hectares	1972-73	33	1,689	1.9
Area of—					
Wheat for grain	'000 hectares	1972-73	2,437	(b) 7,603	32.1
Oats for grain	'000 hectares	1972-73	297	(b) 995	29.8
Barley for grain	'000 hectares	1972-73	744	(b) 2,140	34.8
Hay	'000 hectares	1972-73	224	(b) 1,383	16.2
Pasture seed harvested (d)	'000 hectares	1972-73	26	(b) 84	31.0
Fruit and vineyards	'000 hectares	1972-73	11	(b) 184	6.0
Cotton	'000 hectares	1972-73	4	(b) 44	9.1
Livestock—					
Sheep	'000	Mar. 1973	30,919	(b) 140,109	22.1
Cattle	'000	Mar. 1973	2,182	(b) 29,130	7.5
Pigs	'000	Mar. 1973	476	(b) 3,257	14.6
Wool production (e)	tonne	1972-73	148,517	737,000	20.2
Meat production (f)	'000 tonnes	1972-73	213	2,375	9.0
Whole milk production	mil. litres	1972-73	242	7,083	3.4
Butter production	'000 lb	1971-72	13.2	431.6	3.1
Fish (live weight)	'000 lb	1972-73	15,267	(b) 131,016	11.7
Crustaceans (live weight)	'000 lb	1972-73	22,970	(b) 66,793	34.4
Sawn timber produced (g)	'000 cu m	1972-73	405	(b) 3,582	11.3
Net value of primary production (excluding mining)—					
Agriculture	\$m	1972-73	134	(b) 1,166	11.5
Pastoral	\$m	1972-73	275	(b) 2,074	13.3
Other primary	\$m	1972-73	65	(b) 794	8.2
Mining establishments—Value added (h)	\$m	1971-72	430	1,434	30.0
Gold bullion	'000 oz	1971-72	462	668	69.2
Iron ore production	'000 tonnes	1972-73	64,434	73,275	87.9
Bauxite production	'000 tonnes	1972-73	(i) 5,500	15,547	35.4
Black coal production	'000 tonnes	1972-73	(i) 1,154	59,730	1.9
Crude oil production	'000 barrels	1972-73	(j) 14,924	129,998	11.5
Manufacturing establishments (k)—					
Number		1971-72	2,727	36,147	7.5
Employment—average over whole year	'000	1971-72	64.2	1,302.8	4.9
Wages and salaries paid	\$m	1971-72	255.9	5,256.7	4.9
Value added	\$m	1971-72	472.0	9,703.2	4.9
Total dwellings commenced	number	1972-73	17,234	168,844	10.2
Value of all building commenced	\$m	1972-73	363.0	3,942.8	9.2
Overseas imports	\$m f.o.b.	1972-73	227.3	4,120.7	5.5
Overseas exports	\$m f.o.b.	1972-73	1,154.4	6,214.8	18.6
Overseas cargo shipped	'000 tons (l)	1972-73	8,400	65,840	12.8
Overseas cargo shipped	'000 tons (l)	1972-73	80,923	174,263	46.4
Motor vehicles on register	'000	June 1973	491.1	5,634.1	8.7
New motor vehicles registered	'000	1973	58.5	(b) 649.1	9.0
Road traffic accidents—Persons killed	number	1973	358	3,674	9.7
Television viewers' licences (m)	'000	Feb. 1974	237.0	3,058.6	7.8
Retail sales (including motor vehicles)	\$m	Dec. qr 1973	412.7	(n) 5,018.8	(o) 8.2
Instalment credit for retail sales—Balances outstanding	\$m	Jan. 1974	175.6	1,900.7	9.2
Savings bank deposits per head	\$	Jan. 1974	(b) 616.8	(b) 826.4	n.a.
Household income per head	\$	1972-73	2,350	2,542	n.a.
Age and invalid pensions	number	June 1973	78,219	1,081,421	7.2
War and service pensions	number	June 1973	53,692	642,396	8.4
Student enrolment—					
Government schools	number	Aug. 1973	185,220	2,242,112	8.3
Non-government schools	number	Aug. 1973	42,578	612,237	7.0
Universities	number	Apr. 1973	9,077	133,126	6.8
Colleges of Advanced Education	number	1973	7,841	(b) 61,019	12.8

n.a. denotes 'not applicable'.

(a) Proportion of Western Australia to Australia. (b) Preliminary. (c) In civilian employment. Excludes defence forces and employees in agriculture and private domestic service, and trainee teachers. (d) Including lucerne and lupins for seed. (e) In terms of greasy wool. Comprises shorn wool, dead wool, fellmongered wool and wool exported on skins. (f) Dressed carcass weight. Excludes offal. (g) From local logs. Includes plywood veneers and railway sleepers. (h) See definition on page 380. (i) Mine production as reported to Department of Mines. (j) As reported to Department of Mines. (k) See notes on page 394. Excludes electricity and gas establishments. (l) Tons weight plus tons measurement. (m) Including combined receiving licences. (n) Excludes details of Australian Capital Territory and Northern Territory. (o) See footnote (n).

APPENDIX

CHAPTER I—DISCOVERY OF WESTERN AUSTRALIA

page 10

Captain Stirling's 'Narrative of Operations'

The full text of the 'Narrative of Operations' from Captain James Stirling's report to Lieutenant-General Sir Ralph Darling, then Governor of New South Wales, is reproduced below. Both the text of this Narrative and that of Darling's letter to the Earl of Bathurst (see pages 541-2) are reprinted from the *Western Australian Official Year Book* for 1905.

'On the 17th January, 1827, we quitted Port Jackson, accompanied by the Cutter and Tender. It soon became apparent that the inferiority of her sailing qualities would occasion much delay if I persisted in keeping company with her, and eventually, on the 9th February, off the S.W. Cape of Van Diemen's Land, finding it dangerous and impracticable to take her in tow, from the boisterous weather and heavy seas we encountered, I sent the necessary instructions to the officer in charge of her, and proceeded alone to the Westward.

Had this resolution been taken at an earlier period, we should have saved much time, but her value to us was too great to separate from her until it became absolutely necessary.

On the 4th of March we saw the land, and after an extremely stormy passage rounded Cape Leeuwin.

The first appearance of the coast we were now to explore presented nothing attractive; the monotony of its outline, and the dusky hue of the meagre vegetation it supported, at once accounted for the sterile and hopeless character attributed by early navigators to this region.

The whole of the 4th we continued to sail along the shore at five miles distance from it, and being favoured by a strong southerly breeze, we made such rapid progress that the sun's meridian altitude on the following day was observed within a mile of the West point of Rottnest. Instead of anchoring there, I at once proceeded along the northern shore, and stood over to the main land; but the wind increasing to a strong breeze, and the water at the same time lessening to six fathoms, I found it prudent to return, and at 3 o'clock anchored on the N.E. side of the island, about a mile from the beach. The rest of the afternoon was dedicated to an inspection of the Eastern portion of the island, and of a bay situated between its Eastern and N.E. extremity.

The existence of a safe anchorage on these shores was a fact unknown previous to our arrival; but to find such a place was of such importance to our ulterior operations here that it engaged my earliest and earnest attention. On the following morning, therefore, we were under weigh at daybreak, and again shaped our course to the mainland, in anxious pursuit of the great object abovementioned. The wind being contrary, the whole of the forenoon was spent in beating to windward. At noon we had attained to within half a mile of the entrance to the river, and at one o'clock, the sea breeze setting in with considerable force, and the appearance of the water to windward indicating a shoal, we anchored in 12 fathoms, one mile distance in a W.S.W. direction from the South Head.

In the course of this forenoon we had found favourable opportunities to form a general idea of the country; near the sea the aspect upon the whole was agreeable, although the barren downs immediately behind the beach bore the marks of sterility. We had also opportunity to ease ourselves of the alarm excited on the previous day by the discolouration of the bottom of the sea, which, whenever visible, presented dark spots, and which at first

we took for rocks. This forenoon, however, satisfied me on this point, for we ascertained that the colour proceeded from a vegetable production on the bottom, over which there was an equal depth of water with that on the surrounding patches of sand. I observed, moreover, that the sea here was perfectly smooth and free from the general coast swell from the S.W. quarter, and that the sea breeze, although strong, neither this day nor the one preceding, produced the slightest motion. I was not at this time aware that a bank or continued succession of reefs defends all this part of the coast from the swell which continually beats against their seaward side.

From the anchorage we at this time occupied I had a tolerable view of the surrounding coast, islands, and shoals, and resolving to seek a port further southward, I despatched the Master to look for a channel in that direction. The neighbourhood of the river tempted me to reconnoitre it, and taking Mr. Fraser with me, I proceeded in the gig for that purpose. We crossed the bar and ascended the stream for 5 or 6 miles. In the course of the excursion he made several interesting acquisitions, and I had the good fortune to kill three of those magnificent birds which give a name to the stream we were embarked upon. On my return at nine o'clock the Master reported he had found a bank even with the water's edge, about half-a-mile from the ship; a discovery which made me rejoice exceedingly that we anchored where we did. He reported further that, proceeding along the edge of the bank to the westward, he had traced it as far as certain rocks visible from the ship four miles from us, and that there was a channel near them of $3\frac{1}{2}$ fathoms into deep water. At day-break on the 7th we were accordingly on our way to the rocks indicated; the spit or bank being now to be crossed, every precaution was adopted. An officer highly praiseworthy was sent ahead in a boat, good leadsmen were in the chains, and the ship's head directed towards the expected channel. The water gradually shoaled to 4, then to 3 fathoms, and ultimately to a quarter less than 3, which was little enough for a ship drawing 16 feet 6 inches. Our boat, however, continued to advance, and as I felt confident the officer in her would instantly return according to his instructions if he found less than 3 fathoms by the boat's lead, which was equal to $\frac{1}{4}$ less 3 by the ship's, I determined to stand on, and after half an hour's anxiety the depth increased, and as soon as we reached $5\frac{1}{2}$ fathoms I let go the anchor.

I had no reason, upon reflection, to censure the Master for the discrepancy thus found between the actual depth and his report; the fact was, the water had been raised by the sea breeze to the height he represented and, instead of finding nearly the same depth on the following morning at the same hour as we should have found it in regular tides, we found considerably less; we had not at that time discovered that the tides are on this coast very much influenced by the existing winds.

On a further examination into the nature of the anchorage the ship now occupied, I had reason to be satisfied as to its security. The bank we had passed extended from East to North, and would serve as a breakwater against sea from that direction; the distant land of the main, moreover, was visible between these two points. At the western extremity of the bank there were rocks and breakers which continued in succession as far as Rottneest, in short, all around us rocks, breakers, or sand were visible in every point of the compass, and when I had moored the ship half-a-mile nearer to Pulo Carnac, I was satisfied that she was in perfect safety.

The remainder of the 7th was dedicated to a visit to the Isle Buache of the French charts, and on examination into the soundings and bays on its eastern side, I there found reason to admire a magnificent sound between that island and the main, possessing great attractions for a sailor in search of a port; and although we could not find an entrance into it, I saw the value of the position too strongly not to resolve upon its exploration as soon as circumstances would admit. In the meantime, being now free from anxiety respecting the ship, I determined upon leaving her where she was, and immediately ordered preparations to be made for our journey into the interior.

The route obviously pointed out to us was the course of Swan River. On the morning of the 8th, every necessary being embarked in the cutter and gig, we left the ship and proceeded with a fair wind towards the main. The two boats contained in all eighteen persons, one part of which consisted of Lieutenant Belches, Mr. Surgeon Clause, Mr. Fraser,

Mr. Garling, Mr. Heathcote, and myself; the other of eight seamen and four marines; the latter were provided abundantly with subsistence; two suits of clothes, one whereof was composed of blanket stuff, a hammock for each, a tent for the whole, and arms sufficient to repel any attack that might befall us.

At noon we crossed the bar and reached the entrance. It is flanked by two natural piers or heads, similar in the material of which they are composed, but dissimilar in size. The southern or largest is 70 or 80 feet high, and is connected with the main land by a sandy isthmus bearing a bay on each side. The heads are composed of a limestone rock, which in those parts that are subject to the action of the surge is worn into caverns, while in other places the action of the sun and atmosphere has, in part, decomposed it, exhibiting various specimens of organic remains, both of marine and vegetable origin.

I must protest here against the term "river" as applied to the estuary in which we were now entering. It is a misnomer which leads to confusion of ideas, and I shall therefore designate the various ramifications of the sea within the two heads just mentioned by the general name of "Melville Water," limiting the use of the name Swan River to that stream which, joining the sea at the islands below Fraser's Point, concludes its career as a river. For the extent and direction of the various arms of Melville Water I refer to the chart. I shall only state that the shores near the heads, although not deficient in good soil, present not a pleasant sort of vegetation to the eye; but as the stream is ascended the banks become extremely beautiful and picturesque. Their beauty is enhanced by the lofty trees which occasionally adorn them, and by the bright green pendulous foliage with which the shrubs are covered.

From the heads to Point Belches we proceeded prosperously before a favouring breeze, but we were there to encounter difficulties. The boats took the ground, and we sought in vain by walking from shore to shore to find a channel. The only alternative left was to drag the boats over the bank, which was practised for a distance of two miles, until night overtook us, when the increasing tenacity of the mud obliged us to desist. It was too late then to find a way to firm dry ground, so we were forced to pass the night in the boats, which was done without much inconvenience.

At daylight of the 9th, the gig was carried over the flats above the islands, and breakfast prepared for the party, who, from 5 o'clock in the morning till dark, were employed in fruitless exertions to advance the cutter. At length, despairing of getting her forward, I had her carried about half a mile down, with the intention of sending her back; but having found a bank of sand just below her position, which, although dry, afforded firm footing, I resolved upon attempting it the following morning. As night set in, the whole party was collected, and the men being dressed out in their dry blanket suits, sat down at 7 o'clock to a comfortable dinner, after a day's work which, for unremitting exertion above their middles in mud and water, I never saw exceeded.

On the morning of the 10th, we found the sand bank more favourable to our wishes than the mud had been. At noon I had the satisfaction to see the cutter once more afloat above the shoals, and immediately after everything re-embarked for the prosecution of our course. The obstructions had detained us two days at or near Fraser's Point; our water during such great exertions had suffered many inroads, and it became necessary either to find a supply or return to the ship. Happily Mr. Fraser discovered a fresh water lagoon, and I hit upon a spring of delicious water sufficient to supply all our wants.

The first day of our sojourn here was marked by a visit of three armed natives who seeing Mr. Fraser alone taking care of the gig at about one hundred yards from the shore, came down and motioned him to be gone. It was in vain that he proffered all his stock of amicable signals; they seemed angry at our invasion of their territory, and by their violent gesture gave him reason to rejoice at the space of water which divided them from the boat; supposing, however, that he was beyond reach, they eventually retired, and these were the only natives we saw in that neighbourhood, although many traces existed of its being much frequented. If some of those traces or footsteps had been taken as the standard of size, a mistake sometimes made in savage countries, gigantic indeed must have appeared the authors of those marks.

The country at Fraser's Point differs in character from that which is nearer the sea; above its sandy beaches and precipitous limestone cliffs are succeeded by flat rushy shores, or rising banks of grass, and woodland, but the soil of the hills is still sandy, and the lowlands bear marks of fresh water inundations. The water also at this point assumed the appearance of a river, and at four o'clock on the 10th we embarked upon it for the further prosecution of our voyage. Our progress on that evening was not great, nor could it be so; after a hard day's work, at dark we pulled in for a landing place on the left shore, and in a few minutes a blazing fire, with roasting swans before it, shed cheerfulness on our resting place. Our dominion here, however, was not undisputed; for of all places I have ever visited I think it contained the greatest number of mosquitoes. This phenomenon was easily accounted for when daylight showed us that we had taken up our quarters on a narrow ridge between the river and a swamp.

The regulations established for our movements were to breakfast at 4, start at 5, and row or sail till 11, to rest from that time till 3, and then to proceed till 6 in the evening. At daylight accordingly on the 11th we were sailing upwards through a beautiful reach of the river. On the left lay a level country 15 or 20 feet above the water, covered with brome grass, and studded by a few green trees. On the right, higher banks and greater beauty of scenery, but the soil of inferior quality. The plants which inhabit sandy districts were become rare, while those which flourish in loamy soils were frequently appearing. Swans and ducks, which at Fraser's Point were numerous, now became still more so, and of the first kind we killed with ease as many as we wanted. Fish we saw in abundance, but had no time to spare for their capture. At 7 o'clock we entered a very long reach; the last sandy hills we were to see lay on our left, the distant blue mountains were before us, and the smoke from many fires was rising on different points of view. At this place the river is not above 100 yards wide, and the channels not more than 7 or 8 feet deep; the water is still brackish, but no longer salt. At the head of this long reach we found it drinkable, and running downwards at the rate of a mile an hour over a gravelly bottom. Here, peeping at us from behind trees, we discovered two boys; presently others appeared, and at last we saw a whole tribe of about thirty natives.

The rule I had laid down for my guidance in all communications with these people was neither to seek nor avoid an interview. I adopted this plan as the one best calculated to prevent hostilities, for to approach a savage or to retire before him I felt persuaded, would both produce the same result; in the one case leading him from fear to strike the first blow, and in the other, tempting him to make conquest of enemies who, by retreating, exhibit symptoms of weakness and fear. It was with this view that I resolved in the present case to let our new acquaintances seek or shun us as they best pleased. At first they displayed great reserve, but as we made no attempt to approach them, the warriors followed us along the bank, the women and children retiring out of sight. The woods now resounded with their shouts, to which replied our bugle with equal loudness and with more than equal melody. At this point appearances wore a threatening aspect, for the natives seemed much enraged, and I judged from their violent gestures and the great noise they made that we should shortly have a shower of spears. The river was here only 60 yards across, and as they had the advantage of a bank 20 feet high, our situation put us much within reach of annoyance. We, however, pursued our course until the bank became nearly level with the water, by which time they had assumed more confidence, and began to mimic our various expressions of "How do you do," and at last we held up a swan which seemed to amuse them, and having cast it to them, they testified the greatest delight at the present. This led to an interview which proceeded upon amicable terms. We gave them various articles of dress, a corporal's jacket, and three swans, and received in return all their spears and womeras. At length we were forced to tear ourselves away, and they retired astonished at their acquisitions, intimating that they would willingly accompany the boats, but that a creek a short distance further up prevented their doing so.

From our parting with these people till dinner time we continued to penetrate through a rich and romantic country. At noon we halted, and while the necessary preparations were making for our repast, parties sallied forth in various directions to explore the neighbourhood. Many traces of natives and kangaroos were seen, and indeed the latter animal

had been observed in the course of the days' progress, but we were not sufficiently acquainted with that species of hunting to make prize of any of them. Here were also traces of the cassowary, and we found abundance of ducks, cockatoos, swans, redbill, pigeon, and quail. The country adjacent to this spot is generally of an undulating character; occasionally sections of the higher grounds are seen on the banks of the river, and by presenting steep red, brown, and yellow cliffs, of one or two hundred feet high, add much to the variety of the landscape. The hills in general have an ironstone gut for their base, and good red loam for their surface. The holms or lower grounds, which probably occupy on an average four-fifths of the surface of the country, are composed of a deep dark-coloured loam, devoid of clay or sand, and are usually clothed with brome grass. The stringy bark and apple tree of New South Wales grow to an enormous size on the mounts, some of the latter sort being seen 25 feet in circumference.

On the flats the blue gum tree flourishes, but in a ratio of not more than 10 to an acre, and they are generally unaccompanied by any other tree or shrub except a long-leaved and beautiful species of acacia. At 2 o'clock we resumed our course, and as the river had decreased in width to about 40 yards, some of the party advanced along the banks for the various purposes of preventing a surprise, shooting game, and seeing the country. Its open forest-like character afforded no impediment to their march; indeed, generally, the lowlands resemble fields of grain, for the high grass had been turned yellow by the sun. Such with little variation was the country we passed through for 15 miles, until at 6 o'clock we established our quarters for the night on one of those convenient and pleasant looking flats.

This I thought was the first commodious sleeping place we had encountered. We were now becoming accustomed to the business of rendering ourselves comfortable in the forest; we had delicious weather, and abundance of everything, including cheerfulness.

From the long reach to this spot, we found not less than eight feet of water in the channel of the river. The water was perfectly good and pleasant, but the tide still seemed to have an influence, for the height of the river was a foot less in the morning than at night.

At daylight of the 13th, we were as usual in motion, and observed little variation in the appearance of the land as we ascended, except that the hills on the banks were higher and more frequent, and the soil upon them of a coarser description. They are here composed of a red sandstone, red clay, and an ochry loam, varying in colour between red, brown, blue and yellow. The soil on the lowlands continued as good as ever. About an hour after starting we had the misfortune to stove the cutter on a sunken tree; lead and fearnought, however, speedily effected a cure, and we continued to pursue our course amid increasing difficulties from similar obstructions and from the decreasing width of the stream. The hills around us were high, and we ascended them with ease; but it was in vain that we sought a view of the country; we were the more disappointed because its character was evidently changing. At length, after several halts, we reached, about 11 o'clock, a spot where the river takes an eastern direction, just above a considerable creek on the left hand. We there found insurmountable obstructions to our further progress, in fact, we had reached the termination. Far beyond this there was the bed of a torrent, but no longer a river, nor even a continuation of water except in a succession of distant parts. Here then on a high bank we pitched our tent. The richness of the soil, the bright foliage of the shrubs, the majesty of the surrounding trees, the abrupt and red coloured banks of the river occasionally seen, and the view of the blue summits of the mountains from which we were not far distant, made the scenery around this spot as beautiful as anything of the kind I had ever witnessed.

The hot season of the day was fully occupied in the various operations of encamping, exploring, and observing the latitude. When it became cool, I set off with a party for the hills, but the distance was greater than we supposed, and the sun was setting when we reached the summit. The height of the position we attained was probably 1,200 feet above the plain; the country to the eastward was intercepted from our view by the mountains in that direction, and the sea was also rendered invisible either by distance or the ridge of hills which skirt it; but although our expectations were disappointed as to the two objects just mentioned, they were more than gratified by the view which we contemplated

beneath us. As far as the eye could carry northwards, southwards, and westward, lay extended an immense plain covered in general with forest and varied by occasional eminences and glimpses of the river winding through it.

It was already dark when we began to descend; we had seven miles to go through the forest, but we were not unaccustomed to steer by night, and after three hours smart walking our signal musket shot was replied to by one in the neighbourhood of the camp. Mr. Fraser had very kindly and considerately sent out scouts, and we reached our quarters about nine o'clock.

On the following morning, the 14th, Mr. Fraser, with a party, set out for the hills to the eastward, Messrs. Belches and Heathcote to those in a northern direction, and Mr. Clause and myself explored the country to the westward of the camp. The discoveries of the first party were many curious and interesting botanical specimens and a lump of granite from the ridge; they also saw an emu, but did not secure him. Mr. Belches found a considerable lake of fresh water to the northward near the foot of the mountains, and the result of my expedition was the discovery of a fresh water lagoon and a beautiful running brook, watering several hundred acres of natural meadow, covered even at this season of the year with rich green herbaceous grass.

Neither of these parties encountered any natives, but we found several deserted encampments where their *aiampa* (?) or huts still remained; we had afterwards reason to believe that they frequent the high grounds only during winter, and that at this time they were still on the coast engaged in fishing.

The evening was employed by us in making a garden on the tongue of land which intervenes between the river and the creek. We found there, as indeed it was all around us, rich soil of great depth; the ground had been cleared by fire a few weeks before, and was ready to receive seed. We planted various sorts, and more particularly abundance of potatoes and peach trees. On the following morning the time I had fixed for our departure arrived, and, I believe much to the sorrow of the party generally, we commenced our descent. The gig was stove soon after starting, but speedily cobbled up, and we continued with the stream and wind to descend rapidly. At 11 we stopped to dinner, and, being anxious to move forward, resumed our journey at 2. Mr. Belches found in the neighbourhood of this spot two lakes, one of salt, the other fresh water. At 6 we passed the fires of our first friends in the river, and a little after dark landed for the night at Point Garling, having accomplished a great day's work. On the morning of the 16th we were at Point Fraser very early, and understanding now the nature of the shoals, we had both boats below them and reladen by noon. We then proceeded to Point Heathcote, which I had fixed upon for a resting place on our route. There I had discovered from the top of a high hill that the branch which the French named 'Entree Moreau,' and called it an arm of the sea, extended 7 or 8 miles to the S. by E. I determined therefore to ascertain its nature, and I despatched Mr. Belches in the gig to explore it; this he accordingly did, and on his return, two days afterwards, I learnt that after tracing it for 20 miles, he found it to be a fresh water river, similar in every respect to the one we had just descended. It appears to collect the streams from the mountains to the southward, and conveys them into Melville Water.

I sailed in the cutter from Point Heathcote in the evening, and reached the ship about midnight. On our course we observed several natives on the banks fishing by torch light, and had a great deal of unintelligible conversation with them, and had every reason to suppose that they were not maliciously inclined.

On my return to the ship I found my instructions had been obeyed as to sounding for a channel to Buache Island, but unsuccessfully. I therefore resolved to leave her for the remainder of our stay here at her present anchorage, and immediately commenced the survey of the surrounding islands and banks.

As the history of these operations contains nothing interesting but the result, I shall briefly say that after four days of exertion we were enabled to consider the following services executed:—

The discovery of a channel of not less than 5 fathoms from sea into Cockburn Sound.

A channel of $3\frac{1}{4}$ fathoms from the ship's anchorage into Gage's Roads.

The satisfactory exploration of those two anchorages.

A survey of the entrance to Melville Water.

An exploration of the coasts and bays of Buache Island and the main opposite.

A considerable garden at Woodman's Cove, Buache Island.

Another garden at Point Heathcote.

The discovery of fresh water at both of these places, and of a mineral spring near Arthur's Head.

The various duties effected, on the 20th we sent to Buache Island a cow, two ewes, in lamb, and three goats, where abundance of grass awaited them, and a large pool of water which we had prepared for their use. On the 21st we unmoored, weighed and crossed the bank to the southward into Gage's Roads; on the 22nd, at noon, having finished all that the time allowed me to remain here would permit me, we bore up with the sea breeze, and ran along the coast to the northward at a distance varying from 1 to $2\frac{1}{2}$ miles in 7 fathoms of water. The land immediately on the shore became more sandy and sterile as we receded on this course from the Swan River; but the interior, whenever it could be seen over the sand downs, presented a woody and green aspect. At sunset we were 35 miles from Rottneest, and could see the coast 20 miles further, and as the bottom became rocky and the soundings irregular, I here hauled off shore, and at that point terminated my inspection of the West coast to the northward of Swan River.

On the 23rd, in the afternoon, the land in the neighbourhood of Cape Barnard of the French was in sight. I had seen it from Buache Island, and here I resumed the inspection of the coast. We stood in with a fresh sea breeze, and when it became dark, being within 5 miles of the shore, the weather fine, the soundings regular, and the water very smooth I anchored in 9 fathoms on a sandy bottom.

At daylight the view of the coast was very pleasing. A high and regularly shaped conical mountain occupied the middle of the picture, and was the most distant land visible. Between us and it there was a succession of descending ridges, or rather a plain inclining to the sea shore covered with timber; and sand downs which skirted the white sand beach were not bare nor devoid of verdure and beauty. The sun rising behind the mountain shed every variety of colour over the scene before us. We were now under sail, and making the best of our way to the southward with the declining breeze, at 2 miles from the shore. At 2 o'clock we were close in with the entrance of Port Leschenault, and at sunset anchored 5 miles to the southward of it in 9 fathoms of water. The regularity of the soundings on this part of the coast is truly astonishing. At 30 miles off there is 30 fathoms water, at 10 miles 15, and at 2 miles 6, and this graduation of depth seems to prevail in every line of approach towards the coast. As the bottom is thus regulated with certainty and precision, so equally appear the hours at which the winds commence and resign their reign, the sea breeze setting in at 11 and the land wind coming off at 8.

On the morning of the 24th, we were coasting along the shore with a light breeze. As the head of the bay is approached, the distant hills seem to retire backwards; there are no longer sand downs to be seen, but only a sandy beach. The country seems flatter, but not very different from that portion of the great plain immediately behind Swan River, and of which it is a continuation. At 8 o'clock we were near the River Vasse of the French, and saw some natives on the shore. Here the depth forbids a near approach to the shore. At nine we saw something like a small opening into a lagoon, and, presently after, 20 natives on the beach. They continued to follow our course along the shore, and seemed eager not to be too late. At 11, the water shoaling, I sent a boat to proceed parallel with the shore, keeping in 3 fathoms, and at noon we had completed the circuit of the eastern and southern shores of the bay. Our attendants were here reinforced by another tribe, or detachment of the same. The women and children retired into the bush, and the warriors kept up with our boat. There were many fine specimens of military tactics practised by them, all of which were visible to us from the ship; but as their gestures and actions did not seem hostile, the boat continued her course not far from them; one at last, who seemed the general, left his spears behind him, and advancing upon a projecting

rock, stripped himself of his only garment, a kangaroo skin, to show he had no concealed arms. He seemed so vehemently desirous for an interview, that the boat backed in and gave him a knife and two or three little presents. Shortly after we anchored, and I sent Mr. Belches, provided with many little articles, to open a communication with them. In this he fully succeeded, and ultimately, out of the 16 natives, brought two on board. We entertained them with meat and drink, and clothes, and they returned to their tribe, astonished, delighted, and in perfect amity with us. As it was now the time of the autumnal equinox, we had reason to expect unsettled weather. On the following day it blew a gale of wind from the S.S.W. with thunder, lightning, and rain, but we were sheltered from its force by the land.

The 24th and 25th of March were given to the exploration of the country at this place, and the following results were obtained :—

We ascertained that on the western shore of this bay there is a ridge of hills of a moderate elevation, whose base covers a surface of 7 or 8 miles in breadth from East to West, and of 50 or 60 miles in length from North to South, terminated by our neighbour, Cape Naturaliste, on one hand, and on the other by Cape Leeuwin.

Landward to the East a plain or undulating country stretches away until it meets the base of General Darling's range, which at this point is distant 50 miles probably from the coast. This plain is covered with large timber, and displays the rich and lively verdure of a country frequently watered by showers. The southern shore of this bay, and which bounds it on one side, is low, and I may venture to say, swamps and lagoons would be found behind the beach. The quantity of *Metrosideros* seen growing there indicates water, but unlike the mangrove it shows that water to be fresh.

The sea ridge occupied and interested us much; the soil of its valleys was exceedingly rich, and even the high lands were covered with a tolerably good sandy loam; but it was in its geological structure and its mineral productions that we found the scene of its greatest attractions. As I shall examine it closely as to these points in another part of this report, I shall not dilate upon them here.

The western shore of the bay offers good anchorage all along the coast, and, in the bays which indent it, security from all winds except those from the N.N.W. and N.E. The ground is generally tenacious, varying between sand and clay, and having occasionally, towards the shore, lumps of granite rock. The latter may always be seen and avoided in any depth less than 10 fathoms. Wood is here abundant for the use of ships, and whenever we sought we found water. The northern part of this range indeed is flowing with streams, but some are mineral, some saline, some chalybeate, and many pure, fresh, and agreeable. Of the latter sort Mr. Belches found a source large enough to be called a river, gushing from the side of the solid limestone rock, and rushing to the sea half a mile distant with considerable noise. At the same time, although there is abundance of fresh water, I am not at liberty to call it at present a convenient watering place, although I do not doubt that it may hereafter be found so.

Our friends the natives were constantly in attendance whenever we landed; they were harmless, lively, and extremely inquisitive into the fact of our white complexions. It was not until after repeated trials by rubbing and washing that they would be persuaded that our white colour was not a deception. Their physical character will be stated hereafter; their curiosity seemed insatiable, and to this I must attribute the only instance of theft which fell within my knowledge. I had been among the hills, and found them near the boat when I returned. While awaiting the rest of the party, I stood at their fire, which they had kindled to warm themselves during the rain. To amuse them I took out my note book, and made a sketch of a man opposite, and returned the book into my pocket. No London adept could have removed it more adroitly from thence than the man we called the general did, and I should not have recovered it, had not my coxswain perceived it under his cloak.

On the 25th, the weather having moderated, and having now extended my stay on this coast to the very last day which in reference to my orders I could with propriety prolong it, we weighed from our anchorage, and, passing round the Cape, directed our course for Cape Leeuwin. For several days we had sight of that part, and on the 2nd April anchored in King George's Sound; on the day following, having been able to hear nothing of our cutter, I concluded she had been unable to get to the westward, and had returned to Port Jackson. To that place, therefore, we proceeded, and re-entered it on the 15th April, after an absence of three months.'

Governor Darling's letter to the Earl of Bathurst

The favourable report made by Captain James Stirling, supported by the glowing description of the Swan River area given by Mr Charles Fraser, the Colonial Botanist of New South Wales, induced Governor Darling to recommend to the Home Government that a settlement be established there without delay. The full text of his letter to the Earl of Bathurst is reproduced below.

' 21st April, 1827.

The Right Honourable the Earl of Bathurst, K.G., &c., &c., &c.,

' MY LORD,

I had the honour to acquaint your Lordship in my Despatch, No. 96, of last year, that Captain Stirling was about to proceed with His Majesty's ship *Success* to Swan River, situated on the South West coast of New Holland, in order to ascertain if the opinion which had been formed of the local advantages of that part of the coast, as detailed in the statement which accompanied my Despatch above referred to, was correct.

It must be unnecessary for me to offer any opinion on the subject, as Captain Stirling's report of his expedition, which I have now the honour to enclose, will afford your Lordship all the information and means of judging which I possess.

Assuming that the calculations of the periods necessary to make the respective voyages to and from India and other parts are correctly stated, Swan River would appear to hold out advantages highly deserving attention. A convalescent station might be established there, as proposed by Captain Stirling, for the sick and invalids from India, instead of sending them at once to England. A passage of thirty days, the period stated in the Report as necessary for vessels to go from India to Swan River, is inconsiderable in comparison with the length of time required to make the voyage to Europe, and at Swan River the advantages to an invalid in point of climate would, I have no doubt, be greater than in England. The establishment, however, if to any extent, must be effected directly from England or India, totally independent of this colony, Swan River being too remote, and the voyage too uncertain, to admit of its depending on this place for its supplies. It will be seen by the Report that Captain Stirling considers that Swan River possesses all the advantages with references to the trade with the Eastern Islands, which attach to Melville Island, or any part of the North-West coast of this territory. Among the natural advantages of the Swan River, it will be observed that good water is abundant. The country is, besides, favourable for cultivation, the soil in general being excellent, some specimens of which, and of the natural productions of the country, I do myself the honour to forward to Your Lordship by this opportunity.⁽¹⁾ And the scenery is represented as at once grand and picturesque.

It is much to be regretted that the water at the entrance of Swan River is not of a greater depth, there being only about six feet for a mile above its mouth. More particularly as Melville Water, through which it flows, appears to be a commodious and magnificent basin. Nautical men can, however, best determine whether the advantages of the external anchorages of Gage's Roads and Cockburn's Sound are likely to compensate for the

(1) A case containing mineral substances.

inconvenient nature of the river. As Captain Stirling's visit to Swan River may attract attention, and the report find its way into the French papers, it appears desirable, should His Majesty's Government entertain any intention of forming a settlement at that place, that no time should be lost in taking the necessary steps.

I cannot close this communication without pointing out the zeal and ability with which Captain Stirling undertook, and has completed, this voluntary service; and I beg to be permitted to mention him as an officer highly deserving Your Lordship's approbation and the confidence of His Majesty's Government.

I have the honour to be, etc.,

RA DARLING.'

CHAPTER III—CONSTITUTION AND GOVERNMENT

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The Governor-General of Australia

The Right Honourable Sir Paul Hasluck, P.C., G.C.M.G., retired from the position of Governor-General of Australia on 11 July 1974. He was succeeded by Sir John Robert Kerr, K.C.M.G., K.St.J., who was sworn in as Governor-General by the Acting Chief Justice of Australia, the Right Honourable Sir Edward McTiernan, P.C., K.B.E., on the same date.

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The Governor of Western Australia

On the recommendation of the State Government, the Queen has conferred the order of Knight Commander of the Order of Saint Michael and Saint George on the Governor of Western Australia, His Excellency Air Commodore Hughie Idwal Edwards, V.C., C.B., D.S.O., O.B.E., D.F.C. Conferral of the knighthood was announced on 26 August 1974.

The Honourable Sir Albert Asher Wolff, K.C.M.G., resigned his commission as Lieutenant-Governor of Western Australia on 1 May 1974 and was succeeded by Commodore James Maxwell Ramsay, C.B.E., D.S.C. The new Lieutenant-Governor was sworn in by the Chief Justice of Western Australia, Sir Lawrence Jackson, K.C.M.G., on 30 July 1974.

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THE FEDERAL PARLIAMENT

Mr David Donald Reid (Country Party) was appointed a senator by the Executive Council of Western Australia on 16 January 1974 to fill the casual vacancy caused by the resignation of Senator E. W. Prowse (Country Party) on 31 December 1973.

Consequent upon the population changes disclosed by the 1971 Census, a redistribution of the State electoral division boundaries was carried out in 1973 and Western Australia gained an additional seat in the House of Representatives. The tenth seat was named Tangney after Dame Dorothy Tangney, a former Labour senator for Western Australia.

Following the simultaneous dissolution of the Senate and the House of Representatives by a Proclamation made on 11 April 1974 by the Governor-General of Australia, general elections for the Federal Parliament were held on 18 May 1974. The following tables show the Western Australian membership of the Senate and the House of Representatives as a result of the election.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE

Due to retire on 30 June 1976				Due to retire on 30 June 1979			
Name		Political party		Name		Political party	
Chaney, F. M.	....	Lib.		Drake-Brockman, Hon. T. C., D.F.C.	....	C.P.	
Coleman, Ruth N.	....	A.L.P.		Sim, J. P.	....	Lib.	
Durack, P. D.	....	Lib.		Wheeldon, Hon. J. M.	....	A.L.P.	
McIntosh, G. D.	....	A.L.P.		Willesee, Hon. D. R.	....	A.L.P.	
Walsh, P. A.	....	A.L.P.		Withers, R. G.	....	Lib.	

A.L.P. = Australian Labor Party.

C.P. = Australian Country Party.

Lib. = Liberal Party of Australia.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES

Electoral division	Name	Political party	Electoral division	Name	Political party
Canning	Bungey, M. H.	Lib.	Moore	Hyde, J. M.	Lib.
Curtin	Garland, Hon. R. V.	Lib.	Perth	Berinson, J. M.	A.L.P.
Forrest	Drummond, P. H.	Lib.	Stirling	Viner, R. I.	Lib.
Fremantle	Beazley, Hon. K. E.	A.L.P.	Swan	Bennett, A. F.	A.L.P.
Kalgoorlie	Collard, F. W.	A.L.P.	Tangney	Dawkins, J. S.	A.L.P.

A.L.P. = Australian Labor Party.

Lib. = Liberal Party of Australia.

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THE STATE PARLIAMENT

At the conjoint election for the Legislative Council and the Legislative Assembly held on 30 March 1974, the Liberal Party-Country Party alliance, led by the Honourable Sir Charles Court, O.B.E., was elected to office with a majority in the Legislative Assembly of 7 seats.

The Ministry from 8 April 1974, and membership of the Legislative Council and the Legislative Assembly as a result of the election are given in the following tables.

THE MINISTRY FROM 8 APRIL 1974

Name of Minister	Title of Office
Hon. Sir Charles Walter Michael Court, O.B.E., M.L.A.	Premier, Treasurer, and Minister Co-ordinating Economic and Regional Development
Hon. Walter Raymond McPharlin, M.L.A.	Deputy Premier, and Minister for Agriculture
Hon. Desmond Henry O'Neil, M.L.A.	Minister for Works, Water Supplies, and Housing
Hon. Neil McNeill, B.Sc. (Agric.), M.L.C.	Minister for Justice, and Leader of the Government in the Legislative Council
Hon. Raymond James O'Connor, M.L.A.	Minister for Transport, Traffic, and Police
Hon. Graham Charles MacKinnon, M.L.C.	Minister for Education, Cultural Affairs, and Recreation
Hon. Matthew Ernest Stephens, M.L.A.	Chief Secretary, and Minister for Conservation and Environment, and Fisheries and Fauna
Hon. William Leonard Grayden, M.L.A.	Minister for Labour and Industry, Consumer Affairs, Immigration, and Tourism
Hon. Andrew Mensaros, M.L.A.	Minister for Industrial Development, Mines, and Fuel and Energy
Hon. Edgar Cyril Rushton, M.L.A.	Minister for Local Government, and Urban Development and Town Planning
Hon. Keith Alan Ridge, M.L.A.	Minister for Lands, Forests, and North-West
Hon. Norman Eric Baxter, M.L.C.	Minister for Health, and Community Welfare

MEMBERS OF THE LEGISLATIVE COUNCIL
FROM 22 MAY 1974

Name	Political party	Electoral province
DUE TO RETIRE IN 1977 (a)		
Abbey, Hon. Charles Roy	Lib.	West
Baxter, Hon. Norman Eric	C.P.	Central
Dans, Hon. Desmond Keith	A.L.P.	South Metropolitan
Dellar, Hon. Stanley James	A.L.P.	Lower North
Elliott, Hon. Lyla Daphne	A.L.P.	North-East Metropolitan
Ferry, Hon. Victor Jasper, D.F.C.	Lib.	South-West
Griffith, Hon. Arthur Frederick	Lib.	North Metropolitan
Griffiths, Hon. Clive Edward	Lib.	South-East Metropolitan
Heitman, Hon. Jack	Lib.	Upper West
Leeson, Hon. Ronald Thomas	A.L.P.	South-East
McNeill, Hon. Neil, B.Sc. (Agric.)	Lib.	Lower West
Perry, Hon. Thomas Oswald	C.P.	Lower Central
Williams, Hon. Richard John Lloyd, B.A.	Lib.	Metropolitan
Withers, Hon. William Robert	Lib.	North
Wordsworth, Hon. David John	Lib.	South
DUE TO RETIRE IN 1980 (a)		
Berry, Hon. George William	Lib.	Lower North
Claughton, Hon. Roy Frederick, B.A.	A.L.P.	North Metropolitan
Cooley, Hon. Donald Walter	A.L.P.	North-East Metropolitan
Gayfer, Hon. Harry Walter	C.P.	Central
Knight, Hon. Thomas	Lib.	South
Lewis, Hon. Alexander Ashley	Lib.	Lower Central
MacKinnon, Hon. Graham Charles	Lib.	South-West
Masters, Hon. Gordon Edgar	Lib.	West
McAleer, Hon. Margaret	Lib.	Upper West
Medcalf, Hon. Ian George, E.D. LL.B.	Lib.	Metropolitan
Pratt, Hon. Ian George	Lib.	Lower West
Stubbs, Hon. Robert Henry Claude	A.L.P.	South-East
Thompson, Hon. Ronald	A.L.P.	South Metropolitan
Tozer, Hon. John Carmichael	Lib.	North
Vaughan, Hon. Grace Sydney	A.L.P.	South-East Metropolitan

A.L.P. = Australian Labor Party. C.P. = Country Party.
Lib. = The Liberal Party of Australia (Western Australian Division) Incorporated.

(a) Section 8 of the *Constitution Acts Amendment Act, 1899-1973* provides that a retiring member shall vacate his seat on 21 May in the year of retirement.

MEMBERS OF THE LEGISLATIVE ASSEMBLY
AFTER GENERAL ELECTIONS OF 30 MARCH 1974

Name	Political party	Electoral district
Barnett, Michael	A.L.P.	Rockingham
Bateman, Thomas Henry	A.L.P.	Canning
Bertram, Ronald Edward, A.A.S.A.	A.L.P.	Mount Hawthorn
Blaikie, Barry Roy	Lib.	Vasse
Brand, Hon. Sir David, K.C.M.G.	Lib.	Greenough
Bryce, Malcolm John, B.A.	A.L.P.	Ascot
Burke, Brian Thomas	A.L.P.	Balga
Burke, Terence Joseph	A.L.P.	Perth
Carr, Jeffrey Philip	A.L.P.	Geraldton
Clarko, James George	Lib.	Karrinyup
Court, Hon. Sir Charles Walter Michael, O.B.E.	Lib.	Nedlands
Cowan, Hendy John	C.P.	Merredin-Yilgarn
Coyne, Peter Joseph	Lib.	Murchison-Eyre
Craig, Margaret June	Lib.	Wellington
Crane, Albert Victor	C.P.	Moore
Dadour, Gabriel Thomas, Dr	Lib.	Subiaco
Davies, Hon. Ronald	A.L.P.	Victoria Park
Evans, Hon. Hywel David, B.A.	A.L.P.	Warren
Evans, Hon. Thomas Daniel	A.L.P.	Kalgoorlie
Fletcher, Harry Arthur	A.L.P.	Fremantle
Grayden, Hon. William Leonard	Lib.	South Perth
Grewar, Geoffrey Royden, B.Sc. (Agric.)	Lib.	Roe
Harman, John Joseph	A.L.P.	Maylands
Hartrey, Thomas Augustine, B.A., LL.B.	A.L.P.	Boulder-Dundas
Hutchinson, Hon. Ross, D.F.C.	Lib.	Cottesloe
Jamieson, Hon. Colin John	A.L.P.	Welshpool
Jones, Peter Vernon	C.P.	Narrogin
Jones, Thomas Henry	A.L.P.	Collie
Laurance, Ian James, B.A.	Lib.	Gascoyne
May, Hon. Donald George	A.L.P.	Clontarf
McIver, Kenneth Finlay	A.L.P.	Avon
McPharlin, Hon. Walter Raymond	C.P.	Mount Marshall
Mensaros, Hon. Andrew	Lib.	Floreat
Moiler, James	A.L.P.	Mundaring
Nanovich, Michael	Lib.	Toodyay
O'Connor, Hon. Raymond James	Lib.	Mount Lawley
Old, Richard Charles	C.P.	Katanning
O'Neil, Hon. Desmond Henry	Lib.	East Melville
Ridge, Hon. Keith Alan	Lib.	Kimberley
Rushton, Hon. Edgar Cyril	Lib.	Dale
Shalders, Richard Steele	Lib.	Murray
Sibson, John	Lib.	Bunbury
Skidmore, John Edward	A.L.P.	Swan
Sodeman, Brian	Lib.	Pilbara
Stephens, Hon. Matthew Ernest	C.P.	Stirling
Taylor, Hon. Alexander Donald, B.A.	A.L.P.	Cockburn
Thompson, Ian David	Lib.	Kalamunda
Tonkin, Arthur Raymond, B.A., Dip.Ed.	A.L.P.	Morley
Tonkin, Hon. John Trezise	A.L.P.	Melville
Watt, Leon Harold	Lib.	Albany
Young, Raymond Laurence, F.C.A.	Lib.	Scarborough

SUMMARY

Australian Labor Party (A.L.P.)	22
Country Party (C.P.)	6
The Liberal Party of Australia (Western Australian Division) Incorporated (Lib.)	23

**LEGISLATIVE COUNCIL AND LEGISLATIVE ASSEMBLY
CONJOINT ELECTION OF 30 MARCH 1974**

LEGISLATIVE COUNCIL

Electoral area (a) and province	Electors on roll			Electoral area (a) and province	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Metropolitan	36,027	42,576	78,603	Pastoral Area (con-			
North Metropolitan	40,464	43,986	84,450	tinued)—			
North-East Metropolitan				South-East	11,745	10,364	22,109
tan	32,932	34,634	67,566	South-West	12,281	12,434	24,715
South Metropolitan	32,829	34,123	66,952	Upper West	11,809	10,841	22,650
South-East Metropolitan				West	16,900	16,973	33,873
tan	41,636	45,585	87,221	Total	102,301	97,656	199,957
Total	183,888	200,904	384,792	North-West-Murchison-			
Agricultural, Mining and				Eyre Area—			
Pastoral Area—				Lower North	3,352	2,667	6,019
Central (b)	11,712	10,726	22,438	North	7,415	6,039	13,454
Lower Central	11,882	10,883	22,765	Total	10,767	8,706	19,473
Lower West	13,847	14,033	27,880	WHOLE STATE	296,956	307,266	604,222
South	12,125	11,402	23,527				
Votes recorded—							
Formal							498,110
Informal							25,072
Total					(c)	(c)	523,182
Percentage of electors who voted (d)							89.93
Percentage of informal votes (e)							4.79

LEGISLATIVE ASSEMBLY

Electoral area (a) and district	Electors on roll			Electoral area (a) and district	Electors on roll		
	Males	Females	Persons		Males	Females	Persons
Metropolitan Area—				Agricultural, Mining and			
Ascot	7,611	7,793	15,404	Pastoral Area (con-			
Balga	7,573	8,151	15,724	tinued)—			
Canning	10,612	10,768	21,380	Collie	3,953	3,760	7,713
Clontarf	7,786	8,889	16,675	Dale	5,246	5,455	10,701
Cockburn	8,498	8,710	17,208	Geraldton	3,984	4,058	8,042
Cottesloe	7,340	8,691	16,031	Greenough	3,878	3,404	7,282
East Melville	8,304	8,836	17,140	Kalamunda	4,553	4,801	9,354
Floreat	8,000	8,644	16,644	Kalgoorlie	3,738	3,352	7,090
Fremantle	8,170	8,394	16,564	Katanning	3,992	3,661	7,653
Karrinyup	9,979	10,465	20,444	Merredin-Yilgarn	3,927	3,425	7,352
Maylands	7,863	8,660	16,523	Moore	3,947	3,379	7,326
Melville	7,857	8,183	16,040	Mount Marshall (b)	3,665	3,222	6,887
Morley	9,129	9,489	18,618	Mundaring	4,261	4,263	8,524
Mount Hawthorn	7,509	8,244	15,753	Murray	4,154	4,192	8,346
Mount Lawley	7,558	8,729	16,287	Narrogin	4,042	3,750	7,792
Nedlands	6,987	8,689	15,676	Rockingham	4,447	4,386	8,833
Perth	7,187	7,883	15,070	Roe	4,246	3,716	7,962
Scarborough	7,845	8,397	16,242	Stirling	4,094	3,672	7,766
South Perth	7,060	8,428	15,488	Toodyay	8,086	7,909	15,995
Subiaco	6,513	8,669	15,182	Vasse	4,179	4,173	8,352
Swan	8,329	8,692	17,021	Warren	3,937	3,462	7,399
Victoria Park	7,866	8,775	16,641	Wellington	4,262	4,158	8,420
Welshpool	8,312	8,725	17,037	Total	102,301	97,656	199,957
Total	183,888	200,904	384,792	North-West-Murchison-			
Agricultural, Mining and				Eyre Area—			
Pastoral Area—				Gascoyne	2,025	1,776	3,801
Albany	3,785	4,014	7,799	Kimberley	2,401	1,951	4,352
Avon	4,005	3,754	7,759	Murchison-Eyre	1,327	891	2,218
Boulder-Dundas	4,080	3,587	7,667	Pilbara	5,014	4,088	9,102
Bunbury	3,840	4,103	7,943	Total	10,767	8,706	19,473
Votes recorded—				WHOLE STATE	296,956	307,266	604,222
Formal							
Informal							
Total					(c)	(c)	516,399
Percentage of electors who voted (d)							21,966
Percentage of informal votes (e)							538,365
							90.13
							4.08

(a) As defined in the *Electoral Districts Act, 1947-1965*. (b) Uncontested. (c) Not available. (d) Proportion of votes recorded to electors on roll in contested electoral provinces (Legislative Council) or contested electoral districts (Legislative Assembly). (e) Proportion of informal votes to total votes recorded.

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The Judicature

Mr V. J. A. O'Connor was appointed a Judge of The District Court of Western Australia as from 19 March 1974.

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Overseas Representation in Western Australia

In the period 31 December 1973 to 15 August 1974 a number of changes in consular representatives in Western Australia took place, as listed below.

Belgium—Mr S. Drake-Brockman was appointed to the vacant position of Honorary Consul.

France—The Honorary Consular Agent, Mr J.-L. Montegut, returned to France in July 1974 and the consulate is now closed.

Italy—The vacant position of Consul was filled by Mr L. Pallotta.

Japan—Mr M. Kataoka succeeded Mr S. Kushida as Consul-General.

Netherlands—Mr M. N. B. Grace was appointed to the position of Honorary Consul.

New Zealand—Mr F. D. Pheasant succeeded Mr A. F. Jacobsen, A.F.C., as Consul.

Switzerland—The address of the Honorary Vice-Consul, Mr R. H. Abplanalp, was changed to 29 Marie Way, Kalamunda 6076.

United States of America—Mr R. C. Foulon succeeded Mr W. H. Bruns as Consul and the address of the consulate has been changed to Scottish Amicable Building, 246 St George's Terrace, Perth 6000.

Yugoslavia—The position of Consul, formerly occupied by Mr P. Mihailovski, is now vacant.

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Local Government Districts

In the period 1 September 1972 to 31 December 1973 the only changes in name or designation that occurred were as follows:

The name of the Shire of Nyabing-Pingrup was changed to the Shire of Kent, with effect from 1 December 1972.

The Shire of Gosnells was declared to be a Town under the name of the Town of Gosnells, with effect from 1 July 1973.

CHAPTER IV—POPULATION AND VITAL STATISTICS

PART 1—POPULATION

GEOGRAPHICAL DISTRIBUTION

pages 128-34

Local Government Areas and Statistical Divisions

In Western Australia, local government areas are designated Cities, Towns, or Shires. In the table, Cities are marked (C) and Towns (T), all other local government areas being Shires. The names and designations used are those which were current at 30 June 1973. The estimates for 1972 and 1973 are in accordance with the boundaries as they existed at that date, and *some figures from the 1971 Census have been adjusted in order to provide statistics on a comparable basis.* Changes which occurred between 1 July 1971 and 30 June 1973 are as follows:

The Shire of West Pilbara was constituted, with effect from 27 May 1972, by uniting the Shires of Ashburton and Tableland and by severance of territory from the Shires of Carnarvon, Roebourne and Upper Gascoyne.

The Shire of East Pilbara was constituted, with effect from 27 May 1972, by uniting the Shires of Marble Bar and Nullagine and by severance of territory from the Shires of Port Hedland, Tableland and Wiluna.

The name of the Shire of Nyabing-Pingrup was changed to the Shire of Kent, with effect from 1 December 1972.

As the formation of the Shires of East Pilbara and West Pilbara altered the common boundary between the former North-West and Pilbara Statistical Divisions, separate figures for these divisions are not now available. Consequently, the component local government areas have been listed alphabetically under the single heading *North-West and Pilbara Statistical Divisions.*

Population Estimates

State. Estimates of the population of Australia (and of States and Territories) are prepared quarterly by the Commonwealth Statistician, Canberra. The estimated population in each State or Territory represents the population ascertained at the 1971 Census plus recorded natural increase and recorded net gain from overseas migration for that State or Territory; gains and corresponding losses that result from movements between States and Territories are also taken into account in so far as they are recorded as transfers of State of residence under child endowment procedures or Commonwealth electoral procedures supplemented by results of any special count or sample survey. Holiday, business or other similar short-term movements between States and Territories are omitted. As records of migration according to State or Territory are not complete, the estimated State and Territory populations so derived are approximate and are subject to revision when the actual population of each State or Territory is ascertained at the next Census.

Perth Statistical Division and Remainder of State. The population of the Perth Statistical Division has been estimated on the assumption that the proportion which it bore to the population of the whole State continued to show the same average annual rate of increase after the 1971 Census as it showed in the intercensal period 1966 to 1971. The estimate so derived has then been deducted from the estimate for the State to yield an estimate for all other Statistical Divisions combined. As the State estimate is approximate only, it follows that this also applies to the estimates for the Perth Statistical Division and the remainder of the State.

Local Government Areas. The estimates made for the Perth Statistical Division and the remainder of the State have each been allocated to the several local government areas comprising them by relating the estimated number of houses and flats in each local government area (see pages 553-6) to the number at the 1971 Census, and applying the resultant factor

to the total population enumerated in the local government area at the Census. An exception to this procedure has been made in the case of a few local government areas where exceptional circumstances have been known to exist. In these few cases when making the estimates account has been taken of the best information available from a number of sources as to post-censal variations.

POPULATION IN LOCAL GOVERNMENT AREAS

Statistical Division and local government area	Population at Census, 30 June 1971			Estimated population at 30 June—		Area (square miles) at 30 June 1973
	Males	Females	Persons	1972	1973	

PERTH STATISTICAL DIVISION						
Armadale-Kelmscott	7,952	7,692	15,644	17,500	20,300	275.5
Bassendean	5,748	5,612	11,360	11,400	11,400	3.9
Bayswater	17,093	17,168	34,261	35,600	36,600	10.7
Belmont	16,478	16,178	32,656	32,600	32,500	15.4
Canning (T)	17,786	17,596	35,382	36,800	38,200	25.0
Claremont (T)	4,324	4,855	9,179	9,300	9,100	1.9
Cockburn (T)	12,595	12,416	25,011	26,000	26,600	53.2
Cottesloe (T)	3,770	4,227	7,997	7,900	7,700	1.5
East Fremantle (T)	3,736	3,589	7,325	7,200	7,000	1.2
Fremantle (C)	13,452	12,584	26,036	25,800	25,300	6.9
Gosnells	11,137	10,903	22,040	25,600	29,000	48.3
Kalamunda	9,120	9,242	18,362	19,600	20,700	136.8
Kwinana	6,210	6,014	12,224	13,300	13,200	45.6
Melville (C)	26,064	26,912	52,976	53,200	53,000	20.6
Mosman Park (T)	3,314	3,885	7,199	7,300	7,100	1.7
Mundaring	6,214	5,804	12,018	12,600	13,100	247.3
Nedlands (C)	11,261	11,617	22,878	22,500	21,900	7.9
Peppermint Grove	573	938	1,511	1,500	1,500	0.4
Perth (C)	48,298	49,248	97,546	96,600	94,300	24.4
Rockingham	5,925	5,683	11,608	12,000	12,300	100.9
Serpentine-Jarrahdale	1,112	869	1,981	2,000	2,000	287.6
South Perth (C)	15,288	16,414	31,702	31,200	30,800	7.7
Stirling (C)	76,389	78,493	154,882	157,800	158,800	43.1
Subiaco (C)	7,845	9,274	17,119	16,800	16,400	2.7
Swan	13,398	12,284	25,682	26,900	27,300	398.6
Wanneroo	4,371	4,249	8,620	14,600	23,100	303.9
Total	349,453	353,746	703,199	723,600	739,200	2,073

SOUTH-WEST STATISTICAL DIVISION						
Augusta-Margaret River	1,619	1,487	3,106	3,150	3,150	915
Boddington	382	332	714	700	700	737
Boyup Brook	1,006	962	1,968	1,950	1,900	1,095
Bridgetown-Greenbushes	1,609	1,543	3,152	3,150	3,000	523
Bunbury (T)	8,900	8,879	17,779	18,750	18,600	23.6
Busseton	3,687	3,739	7,426	7,550	7,600	507
Capel	1,125	1,063	2,188	2,250	2,250	214
Collie	3,745	3,790	7,535	7,500	7,250	642
Dardanup	1,044	1,037	2,081	2,200	2,300	204
Donnybrook-Balingup	1,627	1,496	3,123	3,150	3,050	595
Harvey	3,327	3,133	6,460	6,600	6,500	682
Mandurah	2,984	2,981	5,965	6,200	6,200	68
Manjimup	4,532	4,216	8,748	8,750	8,550	2,662
Murray	2,224	1,837	4,061	4,800	4,850	701
Nannup	608	464	1,072	1,050	1,050	1,140
Waroona	993	976	1,969	2,000	2,000	323
Total	39,412	37,935	77,347	79,750	78,950	11,031

SOUTHERN AGRICULTURAL STATISTICAL DIVISION						
Albany (T)	6,098	6,384	12,482	12,600	12,400	13.3
Albany	2,270	2,002	4,272	4,450	4,550	1,708
Broomehill	366	330	696	700	650	452
Cranbrook	767	608	1,375	1,350	1,300	1,310
Denmark	929	851	1,780	1,800	1,750	711
Dumbleyung	650	571	1,221	1,200	1,150	985
Gnowangerup	2,091	1,725	3,816	3,800	3,750	4,349
Katanning	2,244	2,272	4,516	4,500	4,400	588
Kent	520	430	950	950	950	2,530
Kojonup	1,393	1,219	2,612	2,600	2,500	1,134
Lake Grace	1,122	911	2,033	2,050	2,050	3,572
Plantagenet	2,277	2,019	4,296	4,250	4,150	1,864
Tambellup	529	444	973	950	950	554
Wagin	1,307	1,120	2,427	2,400	2,350	750
West Arthur	688	615	1,303	1,300	1,300	1,092
Woodanilling	297	232	529	550	500	435
Total	23,548	21,733	45,281	45,450	44,700	22,046

POPULATION IN LOCAL GOVERNMENT AREAS—*continued*

Statistical Division and local government area	Population at Census, 30 June 1971			Estimated population at 30 June—		Area (square miles) at 30 June 1973
	Males	Females	Persons	1972	1973	

CENTRAL AGRICULTURAL STATISTICAL DIVISION						
Beverley	854	774	1,628	1,650	1,600	892
Brookton	697	575	1,272	1,250	1,200	464
Bruce Rock	894	800	1,694	1,700	1,650	1,051
Corrigin	929	837	1,766	1,750	1,700	1,195
Cuballing	347	316	663	650	650	483
Cunderdin	1,025	837	1,862	1,850	1,800	723
Dowerin	566	505	1,071	1,100	1,050	841
Goomalling	755	689	1,444	1,450	1,400	712
Kellerberrin	1,106	1,026	2,132	2,100	2,050	716
Kondinin	679	547	1,226	1,200	1,200	2,834
Koorda	564	452	1,016	1,000	1,000	1,092
Kulin	715	545	1,260	1,250	1,200	1,850
Merredin	2,500	2,193	4,693	4,650	4,500	1,302
Mount Marshall	600	507	1,107	1,100	1,050	3,913
Mukinbudin	471	401	872	850	850	1,318
Narembeen	772	628	1,400	1,400	1,400	1,475
Narrogin (T)	2,398	2,451	4,849	4,850	4,750	4.4
Narrogin	551	354	905	900	850	625
Northam (T)	3,634	3,483	7,117	7,150	6,900	9.0
Northam	1,320	1,106	2,426	2,450	2,350	548
Nungarin	208	183	391	400	400	442
Pingelly	749	693	1,442	1,450	1,400	476
Quairading	874	778	1,652	1,650	1,600	655
Tanamina	411	366	777	750	750	420
Toodyay	1,100	625	1,725	1,750	1,700	650
Trayning	433	387	820	800	800	630
Wandering	277	223	500	500	500	755
Westonia	259	214	473	450	450	1,261
Wickepin	614	530	1,144	1,150	1,100	768
Williams	641	536	1,177	1,150	1,100	886
Wyalkatchem	587	526	1,113	1,100	1,100	504
York	1,060	984	2,044	2,050	2,000	776
Total	28,590	25,071	53,661	53,500	52,100	30,270

NORTHERN AGRICULTURAL STATISTICAL DIVISION						
Carnamah	510	415	925	950	900	1,094
Chapman Valley	451	394	845	850	800	1,547
Chittering	629	469	1,098	1,100	1,050	469
Coorow	540	372	912	1,000	1,050	1,597
Dalwallinu	1,253	1,029	2,282	2,250	2,200	2,775
Dandaragan	874	471	1,345	1,400	1,450	2,606
Geraldton (T)	7,745	7,373	15,118	15,550	15,550	10.9
Gingin	641	528	1,169	1,250	1,300	1,244
Greenough	987	933	1,920	2,050	2,100	671
Irwin	475	466	941	950	1,000	858
Mingenew	546	441	987	950	950	774
Moora	1,661	1,459	3,120	3,150	3,100	1,464
Morawa	924	725	1,649	1,650	1,600	1,314
Mullewa	1,057	792	1,849	1,850	1,800	4,134
Northampton	1,166	976	2,142	2,250	2,300	5,217
Perenjori	689	515	1,204	1,200	1,200	2,953
Three Springs	550	461	1,011	1,000	1,000	1,015
Victoria Plains	916	784	1,700	1,700	1,650	990
Wongan-Ballidu	1,210	1,033	2,243	2,250	2,150	1,307
Total (a)	23,044	19,760	42,804	43,700	43,500	32,041

EASTERN GOLDFIELDS STATISTICAL DIVISION						
Boulder	6,556	5,787	12,343	12,400	11,950	27,503
Coolgardie	3,226	2,350	5,576	6,100	6,550	11,753
Dundas	1,461	1,090	2,551	2,550	2,450	41,509
Esperance	3,826	3,349	7,175	7,600	7,550	10,979
Kalgoorlie (T)	5,193	4,587	9,780	9,850	9,750	13
Laverton	448	342	790	850	900	70,733
Leonora	465	366	831	850	850	12,256
Menzies	171	70	241	250	250	57,500
Ravensthorpe	638	505	1,143	1,150	1,150	4,970
Yilgarn	1,280	1,059	2,339	2,350	2,300	11,798
Total	23,264	19,505	42,769	43,950	43,700	249,013

(a) Includes Houtman Abrolhos (unincorporated).

POPULATION IN LOCAL GOVERNMENT AREAS—*continued*

Statistical Division and local government area	Population at Census, 30 June 1971			Estimated population at 30 June—		Area (square miles) at 30 June 1973
	Males	Females	Persons	1972	1973	
CENTRAL STATISTICAL DIVISION						
Cue	228	172	400	400	400	5,296
Meekatharra.....	885	587	1,472	1,550	1,500	38,376
Mount Magnet	483	346	829	800	800	5,358
Murchison	140	88	228	200	200	16,347
Sandstone	82	39	121	100	100	10,862
Wiluna	527	465	992	1,000	950	127,579
Yalgoo	244	157	401	400	400	12,890
Total	2,589	1,854	4,443	4,450	4,350	216,708
NORTH-WEST AND PILBARA STATISTICAL DIVISIONS						
Carnarvon	3,632	3,154	6,786	7,350	7,350	20,476
East Pilbara	4,585	2,081	6,666	6,800	7,550	145,810
Exmouth	1,818	1,156	2,974	3,500	3,450	792
Port Hedland	4,515	2,944	7,459	8,500	10,300	4,573
Roebourne	7,055	2,869	9,924	10,100	9,550	5,236
Shark Bay	422	265	687	700	700	10,188
Upper Gascoyne	202	118	320	300	300	21,519
West Pilbara.....	6,404	2,526	8,930	6,600	7,650	41,422
Total	28,633	15,113	43,746	43,850	46,850	250,016
KIMBERLEY STATISTICAL DIVISION						
Broome	1,680	1,344	3,024	3,100	3,200	21,100
Halls Creek	1,020	897	1,917	1,950	2,000	55,177
West Kimberley	2,992	2,500	5,492	5,600	5,500	39,655
Wyndham-East Kimberley.....	2,533	1,636	4,169	4,300	4,400	46,791
Total	8,225	6,377	14,602	14,950	15,100	162,723
STATE SUMMARY						
Perth Statistical Division	349,453	353,746	703,199	723,600	739,200	2,073
Other Divisions—						
South-West	39,412	37,935	77,347	79,750	78,950	11,031
Southern Agricultural	23,548	21,733	45,281	45,450	44,700	22,046
Central Agricultural	28,590	25,071	53,661	53,500	52,100	30,270
Northern Agricultural (a)	23,044	19,760	42,804	43,700	43,500	32,041
Eastern Goldfields	23,264	19,505	42,769	43,950	43,700	249,013
Central	2,589	1,854	4,443	4,450	4,350	216,708
North-West and Pilbara	28,633	15,113	43,746	43,850	46,850	250,016
Kimberley	8,225	6,377	14,602	14,950	15,100	162,723
Total	177,305	147,348	324,653	329,600	329,250	973,848
Migratory (b)	2,308	309	2,617	(c)	(c)	....
WESTERN AUSTRALIA	529,066	501,403	1,030,469	1,053,182	1,068,469	975,920

(a) Includes Houtman Abrolhos (unincorporated). (b) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft. (c) Not available; separate figures for migratory population are recorded only at census dates.

CHAPTER V—SOCIAL CONDITIONS
PART 4—HOUSING AND BUILDING
HOUSING AND THE CENSUS

pages 217-8

Geographical Distribution of Dwellings

The table on pages 554-6 shows the number of private dwellings in local government areas in Western Australia at the Census of 30 June 1971, and estimates of the numbers of private houses and self-contained flats at 30 June 1972 and 1973. The definitions given on page 210 are relevant when considering the data contained in the table.

The estimates as at 30 June 1972 and 1973 have been derived from the number of dwellings recorded at the 1971 Census and statistics of completions, demolitions and conversions (e.g. from private living purposes to business premises) during the post-censal period.

Local Government Areas and Statistical Divisions. In Western Australia, local government areas are designated Cities, Towns, or Shires. In the table, Cities are marked (C) and Towns (T), all other local government areas being Shires. The names and designations used are those which were current at 30 June 1973. The estimates for 1972 and 1973 are in accordance with the boundaries as they existed at that date, and *some figures from the 1971 Census have been adjusted in order to provide statistics on a comparable basis.* Changes which occurred between 1 July 1971 and 30 June 1973 are as follows:

The Shire of West Pilbara was constituted, with effect from 27 May 1972, by uniting the Shires of Ashburton and Tableland and by severance of territory from the Shires of Carnarvon, Roebourne and Upper Gascoyne.

The Shire of East Pilbara was constituted, with effect from 27 May 1972, by uniting the Shires of Marble Bar and Nullagine and by severance of territory from the Shires of Port Hedland, Tableland and Wiluna.

The name of the Shire of Nyabing-Pingrup was changed to the Shire of Kent, with effect from 1 December 1972.

As the formation of the Shires of East Pilbara and West Pilbara altered the common boundary between the former North-West and Pilbara Statistical Divisions, separate figures for these divisions are not now available. Consequently, the component local government areas have been listed alphabetically under the single heading *North-West and Pilbara Statistical Divisions.*

PRIVATE DWELLINGS IN LOCAL GOVERNMENT AREAS

Statistical Division and local government area	Occupied private dwellings			Unoccupied private dwellings			Houses and self-contained flats (occupied and unoccupied)		
	Houses and self- contained flats	Other	Total	Houses and self- contained flats	Other	Total	At 30 June—		
							1971 (census)	1972 (estimate)	1973 (estimate)
Census, 30 June 1971									
PERTH STATISTICAL DIVISION									
Armada-Kelmscott	4,131	38	4,169	311	1	312	4,442	5,065	6,043
Bassendean	3,092	7	3,099	123		123	3,215	3,286	3,378
Bayswater	9,344	33	9,377	340	2	342	9,684	10,273	10,859
Belmont	8,661	27	8,688	285	3	288	8,946	9,121	9,364
Canning (T)	9,215	56	9,271	347	3	350	9,562	10,141	10,860
Claremont (T)	2,762	51	2,813	301	2	303	3,063	3,168	3,205
Cockburn (T)	6,319	107	6,426	444	135	579	6,763	7,169	7,562
Cottesloe (T)	2,956	107	3,063	225	22	247	3,181	3,207	3,227
East Fremantle (T)	2,217	8	2,225	217		217	2,434	2,448	2,456
Fremantle (C)	7,162	195	7,357	473	21	494	7,635	7,711	7,794
Gosnells	5,801	185	5,986	316	10	326	6,117	7,254	8,456
Kalamunda	4,690	150	4,840	313	5	318	5,003	5,436	5,932
Kwinana	2,941	20	2,961	216	6	222	3,157	3,503	3,581
Melville (C)	14,976	43	15,019	504	4	508	15,480	15,845	16,262
Mosman Park (T)	2,467	14	2,481	219	2	221	2,686	2,795	2,798
Mundaring	3,321	38	3,359	289	5	294	3,610	3,860	4,142
Nedlands (C)	6,327	88	6,415	251	6	257	6,578	6,597	6,626
Peppermint Grove	437	1	438	33		33	470	473	479
Perth (C)	29,870	879	30,749	1,861	82	1,943	31,731	32,044	32,249
Rockingham	3,247	70	3,317	1,705	7	1,712	4,952	5,200	5,505
Serpentine-Jarrahdale	463	11	474	49		49	512	525	546
South Perth (C)	10,397	100	10,497	664	16	680	11,061	11,109	11,299
Stirling (C)	43,653	253	43,906	2,402	25	2,427	46,055	47,866	49,609
Subiaco (C)	6,036	119	6,155	426	14	440	6,462	6,471	6,499
Swan	6,380	209	6,589	439	12	451	6,819	7,273	7,620
Wanneroo	2,262	83	2,345	549	11	560	2,811	4,865	7,913
Total	199,127	2,892	202,019	13,302	394	13,696	212,429	222,705	234,264
SOUTH-WEST STATISTICAL DIVISION									
Augusta-Margaret River	924	17	941	258	4	262	1,182	1,207	1,253
Boddington	197	8	205	61	11	72	258	260	261
Boyup Brook	558	6	564	147	3	150	705	709	716
Bridgetown-Greenbushes	892	20	912	163	1	164	1,055	1,057	1,059
Bunbury (T)	4,836	55	4,891	303	8	311	5,139	5,476	5,625
Busselton	2,188	21	2,209	606	5	611	2,794	2,878	2,984
Capel	574	10	584	61		61	635	662	678
Collie	2,180	22	2,202	218	1	219	2,398	2,404	2,414
Dardanup	568	5	573	61		61	629	678	730
Donnybrook-Balingup	852	18	870	99		100	951	962	972
Harvey	1,687	28	1,715	188	1	189	1,875	1,931	1,979
Mandurah	2,212	65	2,277	2,129	26	2,155	4,341	4,551	4,734
Manjimup	2,293	67	2,360	500	7	507	2,793	2,816	2,847
Murray	1,025	26	1,051	462	12	474	1,487	1,780	1,849
Nannup	296	3	299	86		86	382	383	384
Waroona	532	9	541	61	1	62	593	611	628
Total	21,814	380	22,194	5,403	81	5,484	27,217	28,365	29,113
SOUTHERN AGRICULTURAL STATISTICAL DIVISION									
Albany (T)	3,448	61	3,509	539	16	555	3,987	4,055	4,146
Albany	1,171	55	1,226	163	4	167	1,334	1,395	1,464
Broomehill	178		178	20		20	198	198	199
Cranbrook	365	15	380	57		57	422	421	422
Denmark	523	21	544	319	1	320	842	862	877
Dumbleyung	335	5	340	102		102	437	434	436
Gnowangerup	898	93	991	170	9	179	1,068	1,075	1,093
Katanning	1,159	22	1,181	114	1	115	1,273	1,285	1,302
Kent	224	23	247	62	1	63	286	290	295
Kojonup	693	16	709	107		107	800	803	807
Lake Grace	483	58	541	50	11	61	533	544	557
Plantagenet	1,150	29	1,179	163	5	168	1,313	1,314	1,325
Tambellup	245	13	258	31		31	276	277	280
Wagin	631	31	662	150	1	151	781	781	786
West Arthur	349	12	361	59	1	60	408	408	417
Woodanilling	122		122	47		47	169	170	172
Total	11,974	454	12,428	2,153	50	2,203	14,127	14,312	14,578

PRIVATE DWELLINGS IN LOCAL GOVERNMENT AREAS—continued

Statistical Division and local government area	Occupied private dwellings			Unoccupied private dwellings			Houses and self-contained flats (occupied and unoccupied)		
	Houses and self-contained flats	Other	Total	Houses and self-contained flats	Other	Total	At 30 June—		
							1971 (census)	1972 (estimate)	1973 (estimate)
	Census, 30 June 1971								

CENTRAL AGRICULTURAL STATISTICAL DIVISION

Beverley	496	6	502	26	....	26	522	526	530
Brookton	326	11	337	32	....	32	358	356	361
Bruce Rock	461	21	482	82	....	85	543	546	548
Corrigin	480	7	487	111	1	112	591	595	600
Cuballing	175	3	178	36	....	36	211	213	215
Cunderdin	463	16	479	44	1	45	507	514	516
Dowerin	290	12	302	60	....	60	350	355	361
Goomalling	358	37	395	35	....	35	393	396	398
Kellerberrin	528	2	530	100	1	101	628	631	633
Kondinin	301	18	319	81	5	86	382	385	386
Koorda	252	13	265	26	....	26	278	280	285
Kulin	315	22	337	58	3	61	373	373	377
Merredin	1,145	35	1,180	103	....	103	1,248	1,243	1,254
Mount Marshall	280	16	296	68	4	72	348	351	353
Mukinbudin	209	19	228	51	1	52	260	263	267
Narembeen	356	20	376	88	3	91	444	453	456
Narrogin (T)	1,291	10	1,301	100	1	101	1,391	1,404	1,418
Narrogin	213	2	215	39	....	39	252	252	253
Northam (T)	1,853	24	1,877	121	2	123	1,974	1,996	2,002
Northam	582	36	618	73	1	74	655	661	670
Nungarin	109	3	112	41	1	42	150	150	150
Pingelly	380	15	395	71	....	71	451	459	464
Quairading	410	9	419	100	....	100	510	512	515
Tammin	196	5	201	40	....	40	236	236	236
Toodyay	348	3	351	28	1	29	376	380	385
Trayning	211	2	213	63	1	64	274	275	275
Wandering	107	8	115	29	1	30	136	138	138
Westonia	113	9	122	17	1	18	130	130	130
Wickepin	319	4	323	85	1	86	404	404	407
Williams	298	9	307	60	....	60	358	359	363
Wyalkatchem	297	4	301	25	1	26	322	325	331
York	607	3	610	95	3	98	702	704	717
Total	13,769	404	14,173	1,988	36	2,024	15,757	15,865	15,994

NORTHERN AGRICULTURAL STATISTICAL DIVISION

Carnamah	231	26	257	40	4	44	271	278	283
Chapman Valley	221	2	223	30	....	30	251	252	255
Chittering	271	13	284	72	3	75	343	346	348
Coorow	225	27	252	126	....	126	351	384	415
Dalwallinu	540	16	556	109	2	111	649	653	660
Dandaragan	248	60	308	355	13	368	603	634	687
Geraldton (T)	3,752	100	3,852	355	2	357	4,107	4,265	4,409
Gingin	314	24	338	435	2	437	749	808	863
Greenough	506	25	531	157	6	163	663	710	764
Irwin	236	29	265	83	....	83	319	337	350
Mingenew	226	5	231	19	....	19	245	241	242
Moora	764	37	801	113	....	113	877	897	907
Morawa	386	31	417	43	4	47	429	431	432
Mullewa	361	32	393	50	5	55	411	412	416
Northampton	495	36	531	236	....	236	731	777	827
Perenjori	276	17	293	67	1	68	343	346	352
Three Springs	244	10	254	40	3	43	284	289	295
Victoria Plains	338	18	356	60	3	63	398	403	407
Wongan-Ballidu	547	31	578	69	....	69	616	624	624
Total (a)	10,225	613	10,838	2,513	48	2,561	12,738	13,185	13,634

EASTERN GOLDFIELDS STATISTICAL DIVISION

Boulder	3,262	256	3,518	241	15	256	3,503	3,541	3,545
Coolgardie	965	268	1,233	106	15	121	1,071	1,184	1,314
Dundas	550	42	592	110	....	110	660	665	665
Esperance	1,642	211	1,853	252	19	271	1,894	2,020	2,086
Kalgoorlie (T)	2,601	81	2,682	244	14	258	2,845	2,906	2,965
Laverton	55	80	135	6	2	8	61	66	74
Leonora	149	28	177	12	4	16	161	166	169
Menzies	53	22	75	22	....	22	75	76	77
Ravensthorpe	236	89	325	142	12	154	378	391	399
Yilgarn	567	63	630	84	3	87	651	659	673
Total	10,080	1,140	11,220	1,219	84	1,303	11,299	11,674	11,967

(a) Includes Houtman Abrolhos (unincorporated).

PRIVATE DWELLINGS IN LOCAL GOVERNMENT AREAS—*continued*

Statistical Division and local government area	Occupied private dwellings			Unoccupied private dwellings			Houses and self-contained flats (occupied and unoccupied)		
	Houses and self-contained flats	Other	Total	Houses and self-contained flats	Other	Total	At 30 June—		
							1971 (census)	1972 (estimate)	1973 (estimate)
Census, 30 June 1971									
CENTRAL STATISTICAL DIVISION									
Cue	83	13	96	3	....	3	86	86	88
Meekatharra	251	53	304	35	4	39	286	299	307
Mount Magnet	199	11	210	70	....	70	269	269	270
Murchison	50	9	59	2	....	2	52	50	50
Sandstone	31	7	38	1	....	1	32	32	32
Wiluna	97	105	202	3	....	3	100	100	101
Yalgoo	84	8	92	17	....	17	101	101	101
Total	795	206	1,001	131	4	135	926	937	949
NORTH-WEST AND PILBARA STATISTICAL DIVISIONS									
Carnarvon	1,163	485	1,648	97	10	107	1,260	1,375	1,428
East Pilbara	827	221	1,048	82	4	86	909	1,295	1,406
Exmouth	479	191	670	19	14	33	498	594	600
Port Hedland	1,073	447	1,520	123	28	151	1,196	1,375	1,560
Roebourne	933	523	1,456	96	12	108	1,029	1,402	1,480
Shark Bay	88	38	126	19	....	19	107	111	111
Upper Gascoyne	56	13	69	....	....	....	56	56	58
West Pilbara	1,026	233	1,259	224	14	238	1,250	1,639	1,647
Total	5,645	2,151	7,796	660	82	742	6,305	7,847	8,290
KIMBERLEY STATISTICAL DIVISION									
Broome	378	153	531	18	2	20	396	410	440
Halls Creek	113	107	220	7	....	7	120	123	132
West Kimberley	630	412	1,042	52	6	58	682	703	711
Wyndham-East Kimberley	617	280	897	40	1	41	657	684	720
Total	1,738	952	2,690	117	9	126	1,855	1,920	2,003
STATE SUMMARY									
Perth Statistical Division	199,127	2,892	202,019	13,302	394	13,696	212,429	222,705	234,264
Other Divisions—									
South-West	21,814	380	22,194	5,403	81	5,484	27,217	28,365	29,113
Southern Agricultural	11,974	454	12,428	2,153	50	2,203	14,127	14,312	14,578
Central Agricultural	13,769	404	14,173	1,988	36	2,024	15,757	15,865	15,994
Northern Agricultural (a).....	10,225	613	10,838	2,513	48	2,561	12,738	13,185	13,634
Eastern Goldfields	10,080	1,140	11,220	1,219	84	1,303	11,299	11,674	11,967
Central	795	206	1,001	131	4	135	926	937	949
North-West and Pilbara	5,645	2,151	7,796	660	82	742	6,305	7,847	8,290
Kimberley	1,738	952	2,690	117	9	126	1,855	1,920	2,003
Total	76,040	6,300	82,340	14,184	394	14,578	90,224	94,105	96,528
WESTERN AUSTRALIA	275,167	9,192	284,359	27,486	788	28,274	302,653	316,810	330,792

(a) Includes Houtman Abrolhos (unincorporated).

CHAPTER V—SOCIAL CONDITIONS**PART 5—SOCIAL BENEFITS, PENSIONS AND WELFARE SERVICES**

pages 230-1, 238

Social Services and Repatriation Benefits

The *Social Services Act (No. 2) 1974* and the *Repatriation Act (No. 2) 1974* provided for increases in certain pensions, benefits and allowances to come into operation during August 1974. The increases applied to age and invalid pensions, service pensions, sheltered employment allowances, widows' pensions, war widows' pensions, supporting mothers' benefits, and unemployment and sickness benefits. The maximum weekly rate of payment was increased from \$26 to \$31 in the case of a single person and from \$45·50 to \$51·50 in the case of a married couple.

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Nursing Home Benefits

The National Health (Variation of Nursing Home Benefits) Regulations, which came into operation on 1 August 1974, increased the amount of additional nursing home benefit payable by the Australian Government in respect of pensioners enrolled in the Pensioner Medical Service and their dependants. Prior to 1 August 1974 the maximum rate of additional benefit payable in Western Australia was \$1·60 per day. From 1 August 1974 the rate was increased to \$2·80 per day.

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Subsidised Health Benefits

As a result of the decision of the Australian Conciliation and Arbitration Commission in the National Wage Case 1974, the minimum weekly wage payable to adult males was increased from \$60·10 to \$68·10 with effect from the beginning of the first pay-period commencing on or after 23 May 1974. The income eligibility limits applying to subsidised health benefits were amended by a regulation under the National Health Act effective from 24 June 1974. In terms of this amendment, families with weekly income of \$68·50 or less were entitled to full medical benefits, and also to hospital benefits equal to the cost of public ward treatment, without any payment of contributions. Families with income of more than \$68·50 but not more than \$73 per week were eligible for the same benefits on payment of contributions at one-third of the usual rate, while those with income of more than \$73 but not more than \$77·50 per week were eligible for the benefits on payment of contribution at two-thirds of the usual rate.

KURI BAY PEARLS (1)

Kuri Bay, in the far north-west of Western Australia, is the site for one of Australia's largest pearl culture farms which produces some of the biggest and finest cultured pearls in the world.

The farm is owned by Pearls Pty Ltd which have two other installations, one at Thursday Island and the other at Port Moresby, New Guinea.

The Kuri Bay farm was established in 1956 and today produces around 60 per cent of the world's finest round pearls, as well as baroque pearls and half pearls. The farm employs approximately eighty-five men, mostly Torres Strait Islanders. There are two live oyster transport motor vessels, 'Merindah Pearl' and 'Kuri Pearl' and a sixty-five foot steel workboat, together with a fleet of assorted smaller boats.

Pearl oysters (*Pinctada maxima*) are collected from eight luggers working out of Broome. Six operate with conventional divers and two with Hookah gear.

The system of pearl culture is based on a series of floating wooden rafts. Lengths of approximately three inch diameter circular section pine (from the State Pine Forest, Perth) are lashed together to form a basic unit 20 ft x 20 ft. Unit flotation is by eight to ten 44-gallon empty metal drums lashed so that the wood is clear of the water—in this way the untreated wood lasts for about four years. Ten units are joined in two rows of five to complete a raft. One hundred oyster baskets are suspended from each unit, i.e. 1,000 baskets per raft. The raft is moored by twelve 180-lb iron anchors of a special design, each attached by a length of wire $2\frac{1}{2}$ -3 times the depth at high tide. There is a maximum of thirty-four feet rise and fall of tide in the area; depths are variable but in Samson Inlet, for example, the rafts are moored in a high tide depth of eighteen fathoms.

Baskets are made of plastic covered wire mesh, each 2 ft x 9 in x 9 in. Each has nine partitions to house ten oysters in the vertical position, hinge down, i.e. 10,000 oysters per raft. Small oysters are sometimes drilled and attached 1-2 in apart to a hanging rope by twine passed through the drill hole.

Before operating, the oysters are transferred to rafts in Kuri Bay close to the settlement. Here there are several floating 'surgeries' equipped with tables, stands and instruments. Cages are lifted carefully to avoid disturbing the oysters—a pair of forceps can then be jammed between the gaping valves to keep them open for insertion of a wedge. This is made of wood, about $2\frac{1}{2}$ in x $1\frac{1}{2}$ in and tapered towards the insertion end.

Oysters which fail to gape are put back in the cage for a later attempt. No relaxing chemical (menthol) is used as with the smaller Japanese pearl shell *Pinctada martensi*. Oysters from the collection areas have a shell height of $7-7\frac{1}{2}$ in and are said to be only two years old. According to Mr H. Iwaki, general manager of Pearls Pty Ltd, these are the finest oysters for pearl culture in the world.

Each oyster is clamped horizontally, parasitic pea crabs (said to occur in every oyster) removed, and the first oyster of each batch of three used to provide material for grafting. A small strip of mantle edge is cut from near the smooth margin which is the area of most rapid shell deposition. The tissue is cut into three squares, each about $\frac{1}{2}$ cm wide, and this provides grafting material for the same oyster and two others. An incision is then made in the base of the foot and the graft carefully inserted. This is followed by the nucleus. The nucleus used here was a polished sphere $8-8\frac{1}{2}$ mm in diameter, prepared in Japan from American fresh water 'pig-toe' mussel shells imported from the Mississippi river. The wedge is removed and the oyster recaged under the Kuri Bay rafts for a post-operative period of three to four months. The oysters are then examined by X-ray to see whether the nucleus has been retained—usually by 83 per cent of the oysters. In these oysters the mantle graft will grow over the nucleus and continue secreting layers of pearl. Oysters which have rejected the nucleus may be re-operated or used for half-pearl culture. The cages are then transferred to rafts in inlets outside of Kuri Bay, off Augustus Island and Samson Inlet.

(1) Reprint of an article in *Australian Fisheries* by Dr D. A. Hancock, Chief Research Officer, Western Australian Department of Fisheries and Fauna.

Apart from cleaning off the floating weed and fouling growths, the oysters are left undisturbed until harvesting—eighteen to twenty months after the operation. The pearl is extracted by instruments, care being taken to see that the oyster is damaged as little as possible, because it may then be re-used at least once more by inserting a new nucleus which does not now need an additional mantle graft. Approximately 35 per cent of oysters operated on produce good pearls. The remainder include 20–30 per cent which die and about 20 per cent which subsequently reject the nucleus. About 10 per cent are rejected because of poor quality.

The nucleus for the half pearl is a semi-sphere made of alabaster. Larger than the round pearl nucleus, its size is related to the size of the oyster and may range from 10–20 mm diameter.

To operate, the oyster is clamped horizontally as before. The mantle is separated from the uppermost valve and a spot of special transparent adhesive, 'aron-alfa' (a-cyano acrylate) which cures in water, is applied to the shell. The nucleus is pressed against the adhesive for about two minutes by a ring in the end of a special tool—the weight of the handle counterbalances the ring and nucleus against the top valve. When the required number have been attached to one shell the oyster is turned over and the opposite shell is treated as before. The half pearls are carefully sited along the fastest growing border of the oyster, care being taken to see that they are not in opposition. Depending on the size of the oyster, nuclei are attached in relation to their size, e.g. three at 16–17 mm, five at 13 mm diameter.

Half pearls are harvested after seven months. The pearl is removed by sawing around it, and the remainder of the shell, depending on quality may be marketed. Nothing is wasted, because the large muscle of the oyster is extremely palatable, cooked or raw.

Maximum sea temperature in the Kuri Bay area may reach 31.5°C in mid-summer, with a minimum of around 24°C in July. *Pinctada maxima* is said to spawn at about 29–30°C in October–November, i.e. on a rising temperature. However, the Exmouth Gulf species of pearl oyster (*Pinctada albina albina*) has been reported to spawn on a falling temperature at the end of summer (March–April). Weakness of raft oysters after spawning does not seem to affect their survival.

Pearls Pty Ltd have transferred consignments of 100,000 pearl oysters from Western Australia to their Port Moresby farm, where attempts are being made to rear the Western Australian species by hatchery techniques found to be successful in Japan with *Pinctada martensi*.

LIST OF SPECIAL ARTICLES AND MISCELLANEOUS MATTER CONTAINED IN PREVIOUS ISSUES (a)

This list refers to special articles and other more or less important miscellaneous matter which have appeared in previous issues of the Year Book but which are not included, or are included in an abbreviated form only, in the present issue. Owing to considerations of space, the deletions are necessary to make room for new material and the list will be revised each year to provide readers with a cumulative index of special articles or topics. In cases where an article was published in more than one previous issue, the reference to its last appearance only is given, as earlier references can be traced back in the List of Special Articles in the 1969 or 1970 Year Book.

Article or Topic	Year Book
Albany, Port of	1971, pp. 449-51
ANZAAS Congress: Perth, 1973	1973, pp. 562-4
Basic wage, historical summary—	
Commonwealth	1968, pp. 396-401
State	1968, pp. 403-5
Censuses of population and housing, 1911 to 1966	1972, pp. 547-70
Computer Service Centre, Perth	1969, p. 504
Conservation of the flora	1970, pp. 59-61
Cyclones, tropical	1969, pp. 43-50
Education Department, history of	1972, pp. 117-21
Electoral Divisions (Commonwealth)	1971, pp. 97-8
Electoral Divisions (Commonwealth), origin of names of	1970, p. 530
Electoral Provinces and Electoral Districts (State)	1969, pp. 102-3
Esperance, Port of	1973, pp. 444-6
Export price index	1970, p. 507
Flora of Western Australia—	
Acacia	1965, pp. 59-60
'Christmas tree' (<i>Nuytsia floribunda</i>)	1962, p. 51
Economic value of the flora	1968, pp. 54-5
Orchids	1968, pp. 48-9
Rutaceae family in Western Australia	1972, pp. 53-5
Special features of the flora	1962, pp. 51-2
Fremantle, Port of	1970, pp. 441-3
Geraldton, Port of	1972, pp. 447-9
Government administration, Commonwealth	1973, p. 542
Governors and Administrators of Western Australia—	
1828 to 1951	1957, p. 65
1901 to 1959	1960, p. 81
1901 to 1963	1968, p. 89
Governor Stirling's Commission dated 4 March 1831, text of	1965, pp. 452-4
Historical review—chronological notes from 1829	1967, pp. 2-33
Historical Survey of Western Australia	1973, pp. 1-15
Integrated Economic Censuses, 1968-69	1971, pp. 552-64
Labour Force Survey	1971, pp. 508-10
Land—methods of alienation	1969, pp. 276-8
Land—methods of leasing	1969, pp. 278-83
Land settlement schemes, government	1968, pp. 244-6
Land tenure system, origin and development of	1960, pp. 198-9
Legislation, summary of—	
1957 and 1958	1960, pp. 87-9
1959 and 1960	1962, pp. 89-96
1961 and 1962	1964, pp. 104-11
1963 and 1964	1965, pp. 107-14
1965	1967, pp. 111-15
1966	1968, pp. 99-106
1967	1969, pp. 108-15

**LIST OF SPECIAL ARTICLES AND MISCELLANEOUS MATTER CONTAINED
IN PREVIOUS ISSUES (a)—continued**

Article or Topic	Year Book
Legislation, summary of— <i>continued</i>	
1968	1970, pp. 111-17
1969	1971, pp. 105-8
1970	1972, pp. 104-8
1971	1973, pp. 110-12
Linseed, area and production	1973, pp. 349-50
Local government in Western Australia, development of	1971, pp. 565-70
McNess Housing Trust	1969, p. 205
Manufacturing—selected industries	1973, pp. 407-8
Meteorites, Western Australian	1973, pp. 34-5
Meteorological services—	
History of	1960, pp. 34-5
Provision of	1966, pp. 46-7
Metric conversion for Australia	1972, pp. 571-4
Overseas arrivals and departures	1971, pp. 145-6
Parliamentary procedure and administrative machinery	1970, pp. 106-9
Pest control without insecticides	1973, pp. 93-5
Pesticides, effect on beneficial forms of life	1969, pp. 90-1
Pesticides, use of in Western Australia	1971, pp. 87-90
Poisonous plants of Western Australia	1970, pp. 56-9
Police Department, history of	1973, pp. 113-16
Population in local government areas	1972, pp. 542-3
Principal events of 1970	1971, p. 571
Public Works Department, history of	1971, pp. 116-19
Pyrites, production of	1973, pp. 393-4
Railways—	
Origin and development	1968, pp. 360-1
Private	1965, p. 365
Timber	1968, pp. 363-4
Rainfall in agricultural areas, 1969	1970, p. 529
Rents (weekly) of unfurnished houses and flats	1973, p. 216
Satellites and Meteorology	1973, pp. 51-4
Sporting organisations	1970, pp. 196-200
State Government Departments, functions of	1972, pp. 108-16
Third Party Claims Tribunal	1973, p. 254
Tornadoes	1970, pp. 48-51
Trade, constitutional provisions and legislation	1973, p. 412
Trade, historical summary of	1967, pp. 346-7
Trade, overseas, encouragement of	1973, pp. 412-13
University—principal benefactions	1969, p. 173
Use of pesticides in Western Australia	1971, pp. 87-90
West Australian Economy, 1959 to 1973	1973, pp. 565-71
Wheat, development of production	1968, p. 270

(a) Commencing with New Series: No. 1—1957.

LIST OF MAPS CONTAINED IN PREVIOUS ISSUES (a)

Map (b)	Year Book
Air routes at 31 December 1956	1957, p. 289
Air routes at 30 June 1969	1970, <i>between</i> p. 448 and p. 449
Areas of current development	1970, <i>facing</i> p. 336
Electoral Divisions (Commonwealth)	1971, <i>between</i> p. 96 and p. 97
Electoral Provinces and Electoral Districts (State)	1969, <i>between</i> p. 96 and p. 97
Electricity supplies	1967, <i>facing</i> p. 320
Epicentres of large earthquakes	1971, p. 33
General map of the State showing Statistical Divisions, local government areas, roads, railways, air routes and isohyets	1973, <i>inside back cover</i>
Perth Statistical Division	1968, <i>facing</i> p. 112
Port of Fremantle (Outer and Inner Harbour)	1970, <i>facing</i> p. 448
Production, main areas of	1957, p. 73
Railways and road services—routes operated	1967, <i>facing</i> p. 384
Railways road services—routes operated	1964, p. 354
Rainfall	1969 <i>facing</i> p. 32
Rainfall in agricultural areas, 1969	1970, p. 529
Roads, main and important secondary	1968, <i>facing</i> p. 368

(a) Commencing with New Series: No. 1—1957.

(b) All maps listed refer to Western Australia.

NOTE ON STATISTICAL DIVISIONS

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At 31 December 1973 there were 138 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form.

The partition of the Australian States into Statistical Divisions originated from a resolution of a conference of 1928 between the Federal Health Council of Australia and the Statisticians of the Commonwealth and the States concerning the need for the delineation of areas appropriate for the purposes of statistical tabulation. They first became operative in 1929 after consultation between the Commonwealth Statistician, the Statisticians of the States in collaboration with the State health authorities, and the Commonwealth Department of Health. Although Statistical Divisions were devised initially for use in the compilation and presentation of vital statistics, the advantages of extending the system to other fields of statistical investigation were recognised at once and it soon came to have general application in cases where consideration of geographic areas was relevant.

The Statistical Divisions of Western Australia and their component local government areas at 31 December 1973 are listed on the following pages and are shown on the accompanying maps. The population of each Division as recorded at each of the five most recent Population Censuses is shown in the following table. The areas of the Divisions at 30 June 1973 are also given. As the formation of the Shires of East Pilbara and West Pilbara, with effect from 27 May 1972, altered the common boundary between the former North-West and Pilbara Statistical Divisions, separate figures for these divisions are not now available. Consequently, on page 564 the component local government areas have been listed alphabetically under the single heading 'North-West and Pilbara Statistical Divisions'.

STATISTICAL DIVISIONS—POPULATION (a) AND AREA

Statistical Division	Population at Census of 30 June—					Area at 30 June 1973
	1947	1954	1961	1966	1971	
	persons	persons	persons	persons	persons	square miles
Perth	302,968	395,049	475,398	559,298	703,199	2,073
South-West	51,973	68,553	71,637	72,983	77,347	11,031
Southern Agricultural	24,948	36,125	41,623	44,808	45,281	22,046
Central Agricultural	43,790	55,924	57,594	58,820	53,661	30,270
Northern Agricultural	24,665	32,068	35,785	38,817	42,804	32,041
Eastern Goldfields	37,722	34,578	34,142	35,062	42,769	249,013
Central	6,370	4,794	3,959	4,620	7,420	216,708
North-West	2,638	4,220	4,563	9,046	11,784	} (b) 250,016
Pilbara	1,651	2,650	3,243	8,907	28,985	
Kimberley	2,774	3,543	5,668	12,700	14,602	162,723
Migratory (c)	2,981	2,267	3,017	3,039	2,617	....
WHOLE STATE	502,480	639,771	736,629	848,100	1,030,469	975,920

(a) Figures for 30 June 1961 and earlier exclude full-blood Aborigines; those for 1966 and 1971 refer to total population (i.e. including Aborigines). See NOTE on page 120. (b) See letterpress immediately preceding table. (c) Refers to persons (both passengers and crew) who, at midnight on census night, were enumerated on board ships in Western Australian ports, or ships which had left an Australian port before census night for a next port of call in Western Australia. It includes also those who were enumerated on long-distance trains, motor coaches or aircraft.

LIST OF STATISTICAL DIVISIONS **with component Local Government Areas at 31 December 1973** (See also page 563)

PERTH**Cities**

FREMANTLE
 MELVILLE
 NEDLANDS
 PERTH
 SOUTH PERTH
 STIRLING
 SUBIACO

Towns

CANNING
 CLAREMONT
 COCKBURN
 COTTESLOE
 EAST FREMANTLE
 GOSNELLS
 MOSMAN PARK

Shires

Armada-Kelmscott
 Bassendean
 Bayswater
 Belmont
 Kalamunda
 Kwinana
 Mundaring
 Peppermint Grove
 Rockingham
 Serpentine-Jarrahdale
 Swan
 Wanneroo

SOUTH-WEST**Town**

BUNBURY

Shires

Augusta-Margaret River
 Boddington
 Boyup Brook
 Bridgetown-Greenbushes
 Busselton
 Capel
 Collie
 Dardanup
 Donnybrook-Balingup
 Harvey
 Mandurah
 Manjimup
 Murray
 Nannup
 Waroona

SOUTHERN AGRICULTURAL**Town**

ALBANY

Shires

Albany
 Broomehill
 Cranbrook
 Denmark
 Dumbleyung
 Gnowangerup
 Katanning
 Kent
 Kojonup
 Lake Grace
 Plantagenet
 Tambellup
 Wagin
 West Arthur
 Woodanilling

CENTRAL AGRICULTURAL**Towns**

NARROGIN
 NORTHAM

Shires

Beverley
 Brookton
 Bruce Rock
 Corrigin
 Cuballing
 Cunderdin
 Dowerin
 Goomalling
 Kellerberrin
 Kondinin
 Koorda
 Kulin
 Merredin
 Mount Marshall
 Mukinbudin
 Narembeen
 Narrogin
 Northam
 Nungarin
 Pingelly
 Quairading
 Tammin
 Toodyay
 Trayning
 Wandering
 Westonia
 Wickepin
 Williams
 Wyalkatchem
 York

NORTHERN AGRICULTURAL**Town**

GERALDTON

Shires

Carnamah
 Chapman Valley
 Chittering
 Coorow
 Dalwallinu
 Dandaragan
 Gingin
 Greenough
 Irwin
 Mingenew
 Moora
 Morawa
 Mullewa
 Northampton
 Perenjori
 Three Springs
 Victoria Plains
 Wongan-Ballidu

EASTERN GOLDFIELDS**Town**

KALGOORLIE

Shires

Boulder
 Coolgardie
 Dundas
 Esperance
 Laverton
 Leonora
 Menzies
 Ravensthorpe
 Yilgarn

CENTRAL**Shires**

Cue
 Meekatharra
 Mount Magnet
 Murchison
 Sandstone
 Wiluna
 Yalgoo

NORTH-WEST AND PILBARA**Shires**

Carnarvon
 East Pilbara
 Exmouth
 Port Hedland
 Roebourne
 Shark Bay
 Upper Gascoyne
 West Pilbara

KIMBERLEY**Shires**

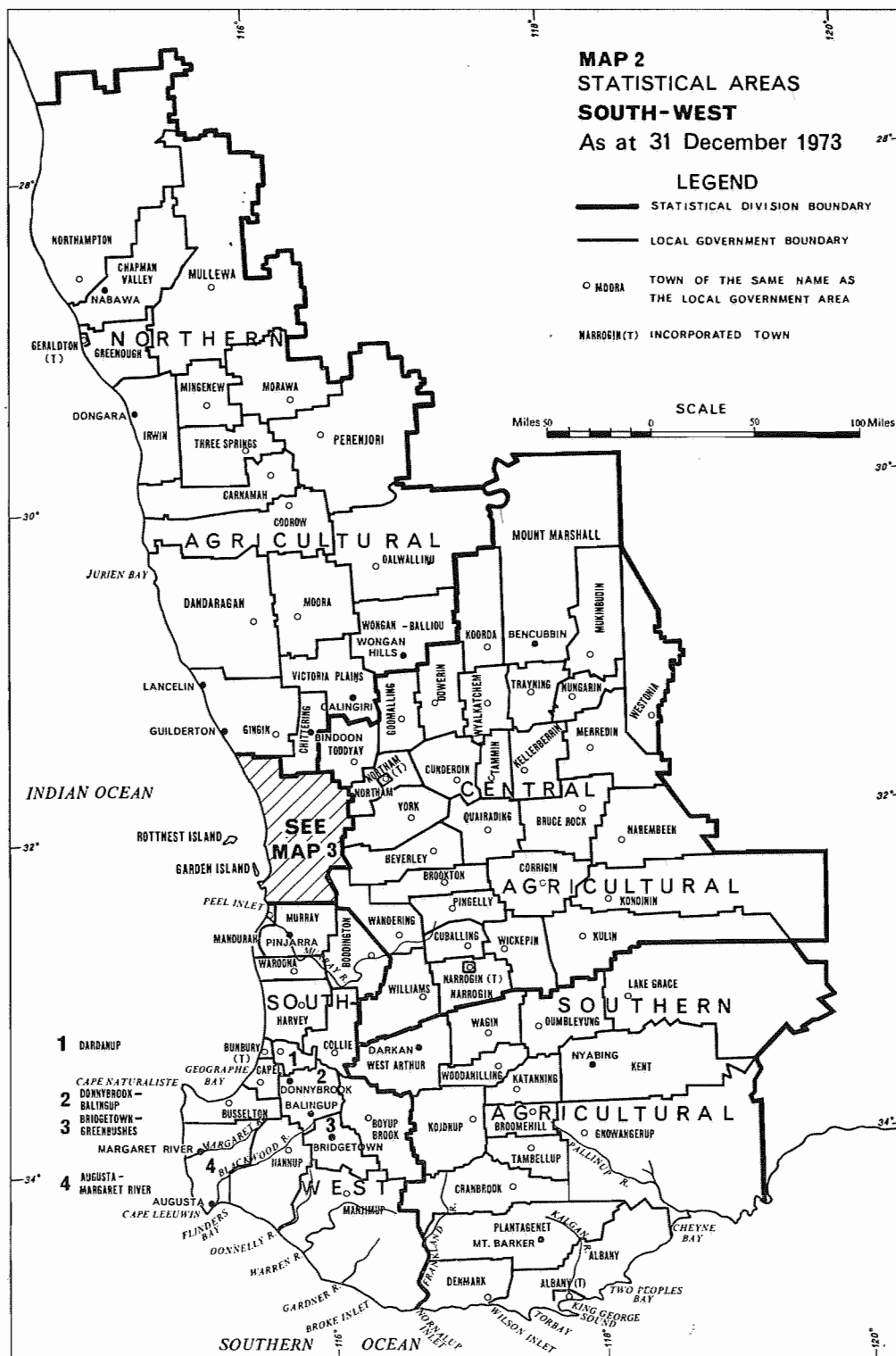
Broome
 Halls Creek
 West Kimberley
 Wyndham-East Kimberley

LIST OF LOCAL GOVERNMENT AREAS at 31 December 1973

(See also page 563)

Local government area	City (C) Town (T) Shire (S)	Statistical Division in which situated	Local government area	City (C) Town (T) Shire (S)	Statistical Division in which situated
ALBANY	T.	Southern Agricultural	Meekatharra	S.	Central
Albany	S.	Southern Agricultural	MELVILLE	C.	Perth
Armada-Kelmscott	S.	Perth	Menzies	S.	Eastern Goldfields
Augusta-Margaret River	S.	South-West	Merredin	S.	Central Agricultural
Bassendean	S.	Perth	Mingenew	S.	Northern Agricultural
Bayswater	S.	Perth	Moora	S.	Northern Agricultural
Belmont	S.	Perth	Morawa	S.	Northern Agricultural
Beverley	S.	Central Agricultural	MOSMAN PARK	T.	Perth
Boddington	S.	South-West	Mount Magnet	S.	Central
Boulder	S.	Eastern Goldfields	Mount Marshall	S.	Central Agricultural
Boypup Brook	S.	South-West	Mukinbudin	S.	Central Agricultural
Bridgetown-Greenbushes	S.	South-West	Mullewa	S.	Northern Agricultural
Brookton	S.	Central Agricultural	Mundaring	S.	Perth
Broome	S.	Kimberley	Murchison	S.	Central
Broomehill	S.	Southern Agricultural	Murray	S.	South-West
Bruce Rock	S.	Central Agricultural	Nannup	S.	South-West
BUNBURY	T.	South-West	Narebeben	S.	Central Agricultural
Busselton	S.	South-West	NARROGIN	T.	Central Agricultural
CANNING	T.	Perth	Narrogin	S.	Central Agricultural
Capel	S.	South-West	NEDLANDS	C.	Perth
Carnamah	S.	Northern Agricultural	NORTHAM	T.	Central Agricultural
Carnarvon	S.	North-West and Pilbara	Northam	S.	Central Agricultural
Chapman Valley	S.	Northern Agricultural	Northampton	S.	Northern Agricultural
Chittering	S.	Northern Agricultural	Nungarin	S.	Central Agricultural
CLAREMONT	T.	Perth	Peppermint Grove	S.	Perth
COCKBURN	T.	Perth	Perenjori	S.	Northern Agricultural
Collie	S.	South-West	PERTH	C.	Perth
Coolgardie	S.	Eastern Goldfields	Pingelly	S.	Central Agricultural
Coorow	S.	Northern Agricultural	Plantagenet	S.	Southern Agricultural
Corrigin	S.	Central Agricultural	Port Hedland	S.	North-West and Pilbara
COTTESLOE	T.	Perth	Quairading	S.	Central Agricultural
Cranbrook	S.	Southern Agricultural	Ravensthorpe	S.	Eastern Goldfields
Cuballing	S.	Central Agricultural	Rockingham	S.	Perth
Cue	S.	Central	Roebourne	S.	North-West and Pilbara
Cunderdin	S.	Central Agricultural	Sandstone	S.	Central
Dalwallinu	S.	Northern Agricultural	Serpentine-Jarrahdale	S.	Perth
Dandaragan	S.	Northern Agricultural	Shark Bay	S.	North-West and Pilbara
Dardanup	S.	South-West	SOUTH PERTH	C.	Perth
Denmark	S.	Southern Agricultural	STIRLING	C.	Perth
Donnybrook-Balingup	S.	South-West	SUBIACO	C.	Perth
Dowerin	S.	Central Agricultural	Swan	S.	Perth
Dumbleyung	S.	Southern Agricultural	Tambellup	S.	Southern Agricultural
Dundas	S.	Eastern Goldfields	Tammin	S.	Central Agricultural
EAST FREMANTLE	T.	Perth	Three Springs	S.	Northern Agricultural
East Pilbara	S.	North-West and Pilbara	Toodyay	S.	Central Agricultural
Esperance	S.	Eastern Goldfields	Trayning	S.	Central Agricultural
Exmouth	S.	North-West and Pilbara	Upper Gascoyne	S.	North-West and Pilbara
FREMANTLE	C.	Perth	Victoria Plains	S.	Northern Agricultural
GERALDTON	T.	Northern Agricultural	Wagin	S.	Southern Agricultural
Gingin	S.	Northern Agricultural	Wandering	S.	Central Agricultural
Gnowangerup	S.	Southern Agricultural	Wanneroo	S.	Perth
Goomalling	S.	Central Agricultural	Waroona	S.	South-West
GOSNELLS	T.	Perth	West Arthur	S.	Southern Agricultural
Greenough	S.	Northern Agricultural	West Kimberley	S.	Kimberley
Halls Creek	S.	Kimberley	Westonia	S.	Central Agricultural
Harvey	S.	South-West	West Pilbara	S.	North-West and Pilbara
Irwin	S.	Northern Agricultural	Wickepin	S.	Central Agricultural
Kalamunda	S.	Perth	Williams	S.	Central Agricultural
KALGOORLIE	T.	Eastern Goldfields	Wiluna	S.	Central
Katanning	S.	Southern Agricultural	Wongan-Ballidu	S.	Northern Agricultural
Kellerberrin	S.	Central Agricultural	Woodanilling	S.	Southern Agricultural
Kent	S.	Southern Agricultural	Wyalkatchem	S.	Central Agricultural
Kojonup	S.	Southern Agricultural	Wyndham-East Kimberley	S.	Kimberley
Kondinin	S.	Central Agricultural	Yalgoo	S.	Central
Koorda	S.	Central Agricultural	Yilgarn	S.	Eastern Goldfields
Kulin	S.	Central Agricultural	York	S.	Central Agricultural
Kwinana	S.	Perth			
Lake Grace	S.	Southern Agricultural			
Laverton	S.	Eastern Goldfields			
Leonora	S.	Eastern Goldfields			
Mandurah	S.	South-West			
Manjimup	S.	South-West			





MAP 3

PERTH STATISTICAL DIVISION

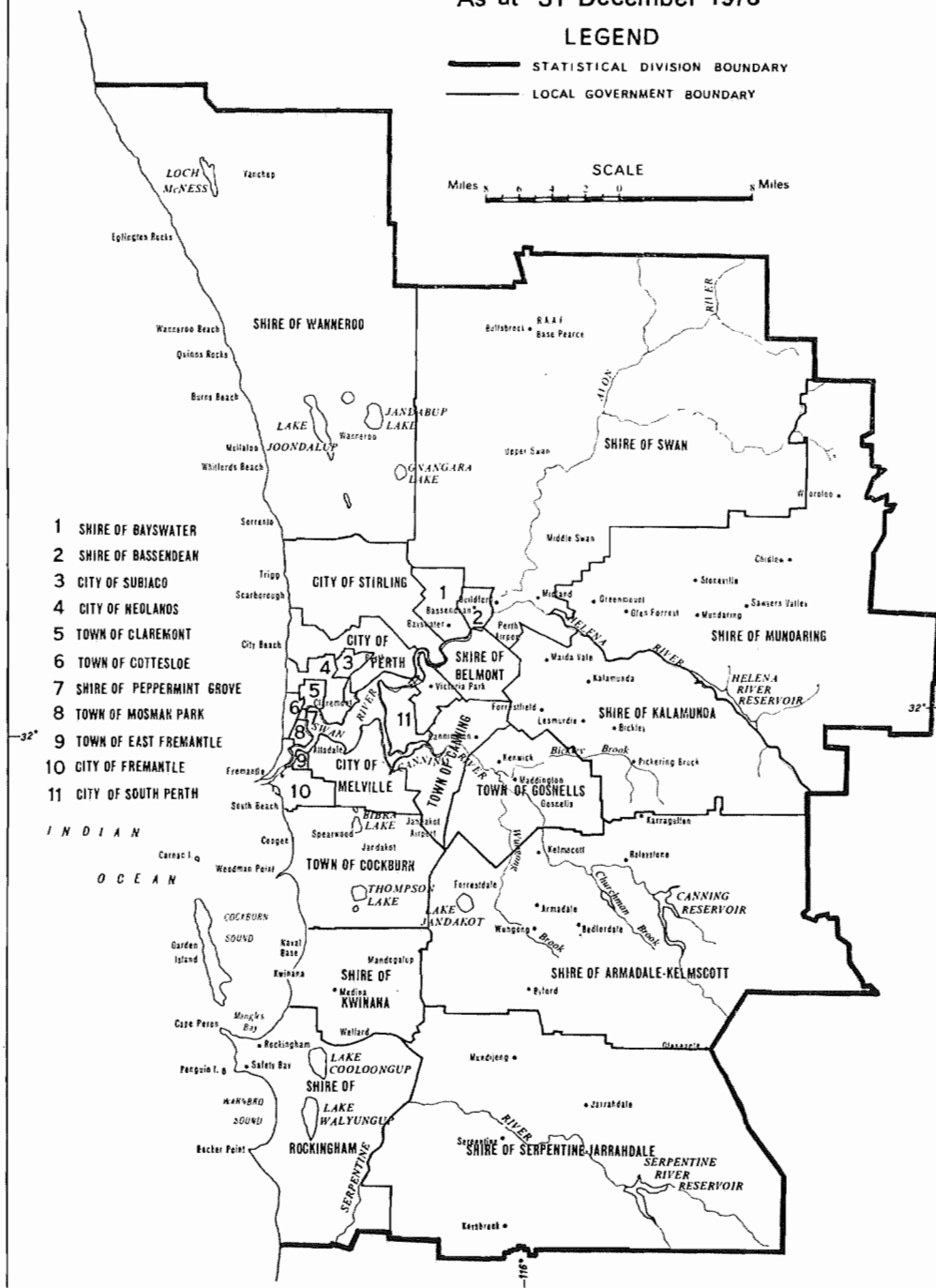
As at 31 December 1973

LEGEND

- STATISTICAL DIVISION BOUNDARY
 — LOCAL GOVERNMENT BOUNDARY

SCALE

Miles 0 2 4 6 8 Miles



INDEX

Information on the same subject appearing on succeeding pages, whether in letterpress, tabular or diagrammatic form, has generally been indexed only to the first of such pages.

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Agricultural Census: Principal Statistics (preliminary statement)	Annually	1973-74	June 1974
Apples and Pears in Cool Stores	Monthly	June 1974	July 1974
Artificial Fertiliser Used on Rural Holdings (a)	Annually	1972-73	Oct. 1973
Bee Keeping Statistics	Annually	1972-73	Feb. 1974
Cattle and Pigs (a)	Annually	1973	Sept. 1973
Cereal Crop Forecast	Annually	1973-74	Oct. 1973
Chicks Hatched and Poultry Slaughtered	Monthly	May 1974	July 1974
Economic Census—Mining Establishments: Details of Operations (†)	Annually	1968-69 to 1971-72	Dec. 1973
Ewe Matings for Lambing	Triennially	1969 and 1970	Feb. 1971
Fisheries	Annually	1971-72	July 1973
Fruit (a)	Annually	1972-73	Jan. 1974
Grain and Other Crops and Cereal Varieties (a)	Annually	1972-73	Oct. 1973
Grain and Seed Harvesters on Rural Holdings (a)	Triennially	1970	Mar. 1971
Hay, Green Feed and Silage (a)	Annually	1972-73	Nov. 1973
Irrigation (a)	Annually	1972-73	Nov. 1973
Livestock Slaughtered and Meat Produced	Annually	1972-73	Jan. 1974
Machinery on Rural Holdings (a)	Annually	1973	Oct. 1973
Mineral Exploration	Annually	1972-73	Feb. 1974
Nursery and Flower Production Statistics	Annually	1972-73	Jan. 1974
Pasture Seed (a)	Annually	1972-73	Oct. 1973
Rock Lobsters Held in Cold Stores and Exported	Monthly	May 1974	June 1974
Rural Land Utilisation (a)	Annually	1972-73	Dec. 1973
Sheep, Lambing and Wool Clip (a)	Annually	1972-73	Sept. 1973
Value of Primary Production (excluding Mining) (preliminary statement)	Annually	1972-73	Feb. 1974
Vegetables (a)	Annually	1972-73	Dec. 1973
Wheat for Grain (a)	Annually	1972-73	Aug. 1973
SECONDARY PRODUCTION—			
Economic Census—Manufacturing Establishments: Summary of Operations by Industry Class	Annually	1971-72	Jan. 1974
Economic Census—Manufacturing Establishments: Industry, Area and Commodity Data (a) (†)	Annually	1971-72	May 1974
Economic Censuses—Manufacturing Establishments: Selected Items of Data classified by Industry and Employment Size (†)	Irregular	1968-69	June 1973
TRADE (EXTERNAL)—			
Quarterly Summary of Overseas Trade Statistics	Quarterly	To Mar. 1974	June 1974
TRADE (INTERNAL)—			
Economic Censuses—Retail Establishments and Selected Service Establishments: Details of Operations by Industry Class and Area (a) (†)	Irregular	1968-69	Oct. 1973
Economic Censuses—Retail Establishments and Selected Service Establishments: Industry and Commodity Details for Statistical Retail Areas (a) (†)	Irregular	1968-69	Apr. 1974
Economic Censuses—Retail Establishments and Selected Service Establishments: Industry and Commodity Details by Size of Establishment (†)	Irregular	1968-69	May 1974
Economic Censuses: Wholesale Establishments (a) (†)	Irregular	1968-69	Oct. 1973
Wholesale Sales and Stocks of Wine and Brandy	Annually	1971-72 and 1972-73	Nov. 1973
GENERAL—			
Monthly Statistical Summary	Monthly	July 1974	July 1974

(a) Includes statistics for individual local government areas.

(†) New issue.

NOTE. In addition to the preceding publications, a number of bulletins which deal exclusively with this State are produced by the Commonwealth Statistician, Canberra who also issues many publications which contain particulars for Western Australia as a component of Australian totals. A complete list of all publications currently issued by the Central and the various State Offices of this Bureau appears in 'Publications of the Australian Bureau of Statistics' issued by the Commonwealth Statistician, copies of which are available free of charge from the Western Australian Office at the address shown on page 589.

MAP OF WESTERN AUSTRALIA

Scale : 1 Inch to 50 Miles

Prepared in the Mapping Branch, National General's Topographic Department of Lands and Survey,
Perth, Western Australia



JOHN J. MURRAY

Homesteads • 77

TERRITORY

N O R T H E R N

A U S T R A L I A

SOUTH